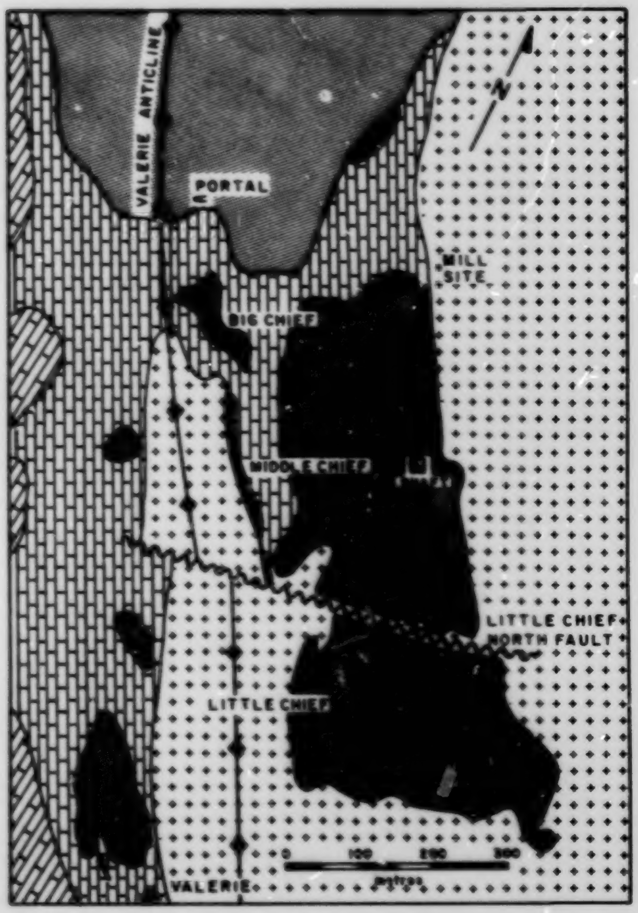
Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada

YUKON

EXPLORATION and GEOLOGY 1982


VALERIE ANTICLINE
PORTAL
MILL SITE
BIG CHIEF
MIDDLE CHIEF
SHAFT
LITTLE CHIEF NORTH FAULT
LITTLE CHIEF
VALERIE
N
0
100
200
300
metres
LEGEND
LIMESTONE
GRAPHITIC LIMESTONE
DIORITE
MAGNETITE SKARN
SKARN
FELDSPATHIC ARENITE

Whitehorse Copper
1967-1982

123,000 tonnes Cu
90 tonnes Ag
7 tonnes Au

Canada

85-1194/

Whitehorse Copper ended production in late 1982. This geological plan map illustrates the Little Chief flank pendant and the Valerie Anticline. It is extracted from a report by D. Tenney, "The Whitehorse Copper Belt: Mining, Exploration and Geology (1967-1980)" - DIAND Geology Section, Yukon Region, Bulletin 1, 1981.

YUKON
Exploration and Geology 1982

Exploration and Geological Services
Northern Affairs Program
Indian and Northern Affairs Canada

Whitehorse, Yukon

© Minister of Supply and Services Canada, 1983

Available in Canada through Authorized Bookstore Agents
and other bookstores or by mail from
Canadian Government Publishing Centre
Supply and Services Canada
Ottawa, Ontario KIA 0S9

Catalogue No. R71-9/1982-1E   Canada 9.95
ISBN 0-660-11450-X   Other Countries 11.95

Published under authority of the Hon. John C. Munro,
P.C., M.P., Minister of Indian Affairs and Northern
Development.
Whitehorse, 1983
QS-Y012-000-EE-A1

RESUME

L,INDUSTRIE MINIERE AU YUKON

En 1982, l'exploitation minière s'est arrêtée progressivement et l'exploration des minéraux a ralenti considérablement. La mine Faro de la société Cyprus Anvil a cessé ses activités en juin, celle de UKHM à Elsa, en juillet, et la société Whitehorse Copper prévoit épuiser son minerai en décembre de cette année. Les dépenses d'exploration ont diminué des deux tiers par rapport à celles de 1981. Il y a eu une période d'attente caractérisée par plusieurs traits : les travaux d'équipement ont été réduits et peu de programmes de forage ont été exécutés; le travail effectué, en général, s'est limité au site principal d'exploitation, négligeant le reste de la propriété; le nombre de concessions ajoutées a été le plus souvent minime; peu de nouvelles concessions ont été jalonnées et la taille des groupes de concessions individuelles a été beaucoup plus petite que les années précédentes.

L'exploration a visé principalement trois groupes de produits, dans l'ordre suivant : 1) plomb, zinc, argent; 2) tungsténe, molybdéne, étain; 3) métaux précieux. Les métaux vils contenus dans les couches schisteuses ont fait l'objet d'une exploration active dans plusieurs régions comme la passe MacMillan, Earn Lake, à l'est de Rancheria et, à titre de reconnaissance, dans l'extrême sud-est du Yukon. Un chiffre de tonnage infra-économique a été donné pour le gisement XY à la passe Howards. Les concessions de tungsténe ont été actives. Des forages supplémentaires ont amélioré la base de données au gisement de tungsténe Ray Gulch de la Canada Tungsten, de même que le creusage d'une tranchée et l'échantillonnage global à la veine et au gisement massif de quartzwolfram de l'Union Carbide à Kalzas Twins. La mine Mactung de la société Amax est demeurée en situation d'attente, de meme que l'important gisement Logtung de wolfram-molybdéne d'Amax et de la Regional Resources Ltd. Amoco et Tintina Silver ont continué le forage en profondeur de leur porphyre de molybdéne à Red Mountain et ont constaté que la minéralisation se maintenait dans les profondeurs. Des forages supplémentaires dans le porphyre de molybdéne plutonien de Cominco et de Getty ont de nouveau confirmé le tableau infra-économique révélé l'an dernier. L'exploration de l'étain s'est limitée plus ou moins à d'autres forages exécutés par la Cominco dans la roche métamorphique stannifére de la concession JC et par la D.C. Syndicate dans les concessions MUN. Les métaux précieux ont fait l'objet de forages dans des terrains volcaniques du Crétacé récent et du Cénozoique, de la part d'Agip à Mount Skukum et à Archer, et de Cathro à Prospector Mountain. On a recherché le cuivre dans les régions habituelles : UKHM au nord-ouest de Carmacks et la société Whitehorse Copper Mines dans la ceinture cuprifére de Whitehorse. Des travaux mineurs d'exploration ont visé l'uranium, l'amiante, la barytine, le nickel et le charbon.

L'exploitation des placers a été moindre en 1982 qu'en 1981. La plupart des criques étaient occupées, mais plusieurs sociétés très actives en 1981 n'ont rien fait en 1982. On estime que la production de l'or, en 1982, se situe aux trois quarts de celle de 1981.

PRODUCTION MINERALE DU YUKON

1er JANVIER 1982 - 31 DECEMBRE 1982

		Cyprus Anvil* (fermée le 4 juin)	Whitehorse Copper	United Keno* (fermée le 13 juillet)	Total
Minerai traité (tonnes)		1 635 241,38	569 137,02	50 354,81	2 254 733,21
Argent	(g)	28 017 224,11	5 293 100,32	34 381 342,35	67 691 666,78
Plomb	(kg)	33 905 024,94		888 320,18	34 793 345,12
Zinc	(kg)	59 392 290,25		119 675,74	59 511 965,99
Cuivre	(kg)		7 246 701,59		7 246 701,59
Or	(g)	62 860,17	299 791,09		362 651,26

* En raison de la fermeture de la Cyprus Anvil et de la United Keno, les chiffres de production ne visent que la période de janvier à juin et de janvier à juillet respectivement.

CONTENTS

PAGE

YUKON EXPLORATION AND GEOLOGY, 1982
INTRODUCTION.................................... 1

EXPLORATION AND GEOLOGICAL SERVICES DIVISION... 1

YUKON MINERAL INDUSTRY 1982, AN OVERVIEW; J.A. Morin, K.J. Grapes and R.L. Debicki....... 4

TECHNICAL REPORTS

ORIGIN OF THE CLINTON CREEK ASBESTOS DEPOSIT; Grant Abbott.................................. 18

GEOLOGY OF THE EPD STANNIFEROUS BRECCIA DEPOSIT, MCQUESTEN AREA, 115 P YUKON; Diane S. Emond.... 26

REPORT OF 1982 FIELD WORK ON EARLY TERTIARY CLASTICS, WEST-CENTRAL YUKON; Grant Lowey...... 34

PETROLOGY AND GEOCHEMISTRY OF THE PATTISON ALASKITE PLUTON; Gregory V. Lynch, Calvin Pride and Pat Watson................................ 38

A SEDIMENTOLOGIC DESCRIPTION OF CLEAR CREEK FLUVIATILE SEDIMENTS. 115 P, CENTRAL YUKON; S.R. Morison.................................. 50

PROTEROZOIC AND EARLY PALEOZOIC VOLCANISM IN THE OGILVIE MOUNTAINS: An example from Mount Harper, west-central Yukon; C.F. Roots and John M. Moore, Jr.. 55

UPPER TRIASSIC ROCKS AT HILL 4308, LABERGE MAP AREA, 105 E, YUKON; Pamela Reid and Jennifer O'Brien..................................... 63

THE SKUKUM VOLCANIC COMPLEX, 105 D SW; GEOLOGY AND COMPARISON TO THE BENNETT LAKE CAULDRON COMPLEX; M.J. Smith........................... 68

GEOLOGY OF PYRITE-SPHALERITE-GALENA CONCENTRATIONS IN PROTEROZOIC QUARTZITE AT QUARTZ LAKE, SOUTHEASTERN YUKON; P. Vaillancourt........... 73

SUMMARIES OF ASSESSMENT WORK, DESCRIPTIONS OF MINERAL PROPERTIES, AND MINERAL CLAIMS STAKED IN 1982.. 79

LA BICHE (NTS 95 C)............................ 80
COAL RIVER (NTS 95 D).......................... 82
FLAT RIVER (NTS 95 E).......................... 88
WATSON LAKE (NTS 105 A)........................ 90
WOLF LAKE (NTS 105 B).......................... 94
TESLIN (NTS 105 C)............................. 104
WHITEHORSE (NTS 105 D)......................... 110
LABERGE (NTS 105 E)............................ 120
QUIET LAKE (NTS 105 F)......................... 122
FINLAYSON LAKE (NTS 105 G)..................... 126
FRANCES LAKE (NTS 105 H)....................... 130
NAHANNI (NTS 105 I)............................ 134
SHELDON LAKE (NTS 105 J)....................... 136
TAY RIVER (NTS 105 K).......................... 140
GLENYLON (NTS 105 L)........................... 146
MAYO (NTS 105 M)............................... 151
LANSING (NTS 105 N)............................ 160
NIDDERY LAKE (NTS 105 O)....................... 162
SEKWI MOUNTAIN (NTS 105 P)..................... 170
BONNET PLUME (NTS 106 B)....................... 172
NADALEEN RIVER (NTS 106 C)..................... 174
NASH CREEK (NTS 106 D)......................... 178
WIND RIVER (NTS 106 E)......................... 182
SNAKE RIVER (NTS 106 F)........................ 186
DEZADEASH (NTS 115 A).......................... 188
MOUNT ST. ELIAS (NTS 115 B-C).................. 190
KLUANE LAKE (NTS 115 G-F)...................... 192
AISHIHIK LAKE (NTS 115 H)...................... 196
CARMACKS (NTS 115 I)........................... 200
SNAG (NTS 115 J-K)............................. 206
STEWART RIVER (NTS 115 O-N).................... 208
McQUESTEN (NTS 115 P).......................... 214
LARSEN CREEK (NTS 116 A)....................... 218
DAWSON (NTS 116 B-C)........................... 222
OGILVIE RIVER (NTS 116 G-F).................... 228
HART RIVER (NTS 116 H)......................... 230
MARTIN HOUSE (NTS 106 K), TRAIL RIVER (NTS 106 L), EAGLE RIVER (NTS 116 I), PORCUPINE RIVER (NTS 116 K), OLD CROW (NTS 116 N-O), BELL RIVER (NTS 116 P), BLOW RIVER (NTS 117 A)...... 232

LIST OF REFERENCES............................. 235

INDEX.. 240

YUKON EXPLORATION AND GEOLOGY, 1982

Introduction

The Government of Canada manages mineral resources in Yukon and Northwest Territories through the Northern Affairs Program of the Department of Indian Affairs and Northern Development. Within the Program three mineral resource directorates exist based in Yellowknife, Northwest Territories, Ottawa-Hull and Whitehorse, Yukon. This volume is prepared by the Exploration and Geological Services Division of the Mineral Resources Directorate, Yukon.

Yukon Exploration and Geology 1982 discusses the geology of Yukon mineral deposits and mineral districts under active investigation. Much of the reports are summaries of exploration work done in Yukon during 1982 by mineral exploration companies. Some work done in 1981 that was not previously documented is also included. This volume follows earlier annual Mineral Industry Reports for Yukon published by the Department of Indian and Northern Affairs and by the Geological Survey of Canada.

The geological reports present the results of field work done during 1982. The aim of these reports is to provide authoritative descriptions of the geology of mineral showings or districts based on first-hand field study. Most of these studies focus on areas of current economic interest, but some concern district or deposits where geological problems require study. Reports are by geologists on the Geology Division's staff, geologists and geology students on a contract basis, Division summer employees and also general geological studies in Yukon that were not supported by D.I.A.N.D., but for which this volume is a suitable publication vehicle. The geological reports are grouped in the first part of this volume and are ordered alphabetically by author.

Summaries of exploration work are grouped in the second part of this volume. They are based on reports submitted to the department for assessment credits by exploration companies. Some of these are amplified by replies to questionnaires sent to exploration companies by the Geology Section and by responses to enquiries of the staff. Each summary has been edited and approved for publication by the company that filed the work. The emphasis in the summaries is on the nature and the results of work done. References to published descriptions of the geology are included. For new showings, where no description is published, a summary based on regional data is given.

The reports and summaries of work done are keyed to a set of maps which are reductions of the 1:250,000 topographic maps of Yukon. The maps show three features in relation to the topography. They include the location of known mineral occurrences with a key naming them. The key also gives the most recent literature reference describing the occurrence. The maps also show the areas covered by mineral and placer claims in good standing and ather areas covered by leases to prospect for placer and coal. Mineral claims staked during 1982 are distinguished from those located earlier to emphasize areas that will focus future exploration. The claim information derives from the maps of the Supervising Mining Recorder, D.I.A.N.D., Whitehorse. Finally, the maps indicate secondary access roads and winter tote trails.

The maps are ordered according to the National Topographic System and the work summaries and records of new staking also follow this order. Thus, each map precedes a section describing exploration activity within that area. Each report on a property includes the National Topographic System reference number keying it to the relevant 1:50,000 scale map-area. The number beside the NTS relates to the property location on the index map. Latitude and longitude further define the location. The name reported is that given by the original discoverer or staker; it may not match that of the present claims. Repetition of names is avoided by assigning a unique name where the claim name is not diagnostic.

The geological, geochemical and geophysical reports accepted for credit as assessment work by the Department of Indian and Northern Affairs may be of interest to exploration geologists. An index to mining asseessment reports, including those that are confidential and those available for inspection, is available from the department. Assessment reports are released for public inspection six months after the claims (on which the work was carried out) have lapsed.

EXPLORATION AND GEOLOGICAL SERVICES DIVISION

Services

The Geology Division sells topographic, geological, aeronautical, and land-use maps, as well as Geological Survey of Canada publications, covering Yukon and adjacent parts of B.C., and the N.W.T. A library of G.S.C., B.C. Dept. of Mines, US federal and Alaska state government geological publications, and geological texts and journals is available for consultation. Open file reports of the Geological Survey of Canada that concern Yukon are available for viewing. Air photos, covering Yukon from latitude 60 to 65 N, are available for use in the office as is the latest catalogue of Yukon air photos from the National Air Photo Library. A current list of good prints of the 1972-1977 satellite (LANDSAT) imagery of the Yukon is included in the Air Photo catalogue. The office also has a LANDSAT mosaic of the Cordillera on display and a collection of colour LANDSAT photos of the Yukon.

The H.S. Bostock Core Library, across the street from the Geology Division, contains drill core from Yukon mining properties. Some core is available for inspection and some is confidential. The core library contains working quarters equipped with diamond saws, a core splitter, a vibrating polisher, rock staining facilities and fume hood. A petrographic microscope with capability for transmitted and reflected light, and a binocular microscope are also situated in the Core Library. The Geology Division has the following technical equipment: McPhar Spectra 44 (four channel) gamma-ray spectrometer, ultraviolet lamps and two GR-101A scintillometers. The equipment and instruments are available for use by industry personnel by arrangement with the core librarian.

Activities

The Geology Division staff includes five geologists, an office manager, core librarian and a secretary. No major staff changes have taken place since the last volume was prepared. Numerous projects were undertaken by the Division in 1982, both by permanent and term staff members and also on a contract basis by individuals associated with universities.

Jim Morin, Chief Geologists and Regional Manager of the Division, continued his investigations of continental volcanic rocks in western Yukon and precious metal occurrences throughout Yukon.

Minerals Geologist Grant Abbott continued his investigations of the structure and stratigraphy of the Macmillan Pass area in eastern Yukon. A large part of his field work involved active consultations with industry workers in the area concerning how their rocks more or less fitted into the regional picture that he has developed. His 1981 work is published in the 1981 Yukon Exploration and Geology Report. The Macmillan Pass area is host to several stratiform base metal shale hosted deposits and a major tungsten skarn deposit and as such, the geological picture Grant is developing is much needed. His geological maps (1:50,000) of much of 105 O SE were released in June 1983 as an Open File. Grant's investigation into structure in the Clinton Creek area west of Dawson are included in this volume.

Steve Morison joined the permanent staff in January 1982 as a Placer Geologist, along with Staff Geologists Pat Watson and Kate Grapes. Steve's reponsibilities include placer, coal and surficial geology along with industrial minerals. His background demonstrates expertise in surficial geology, much of it with the Geological Survey of Canada in Yukon. The placer gravels in the drainage basin of Clear Creek were his main study this year. Surficial geological maps of the Clear Creek basin were released as an Open File in July, 1982. A text discussion of the Clear Creek area is included in the present volume.

Staff Geologist, Pat Watson is responsible for evaluating assessment reports and summarizing exploration work in the Whitehorse and Watson Lake Mining Districts for this volume. Her field activities in 1982 mainly involved geological mapping of the Pattison Pluton in the Dawson Range.

Staff Geologist, Kate Grapes is responsible for maintaining and updating the mineral occurrence-claim maps in this volume along with exploration work summaries for the Mayo and Dawson Mining Districts. Her field activities were divided in two - first working in the shales of the Macmillan Pass area with Grant Abbott and later with Steve Morison describing surficial sections in the Clear Creek area.

The 1982 Whitehorse Geoscience Forum was held Dec. 5-8, 1982. All geologists on staff presented papers to an audience of about 170 geologists, prospectors and interested lay people.

Basic prospecting courses in Mayo and Watson Lake were conducted by Grapes, Morin and Watson during the winter of 82-83. In addition, all geologists on staff contributed to the running of basic and advanced prospecting courses in Whitehorse.

Geologist, Ruth Debicki was a term and contract employee in 1982 and spent the field season studying Yukon placer mining operations. She produced a report on these covering the period 1978-1982 that will probably be released in late 1983. The extensive data, text, map and photo documentation provides a much needed base reference volume for the Yukon placer mining industry.

Fieldwork of several geologists was supported in full or in part by DIAND contracts - P. Reid, G. Lowey, M. Smith, G. Lynch and D. Emond.

Pam Reid completed her fieldwork on a Triassic bioherm at Lime Peak east of the south end of Lake Laberge. Her research work towards a Ph.D degree is being conducted at the University of Miami and her fieldwork is supported by a DIAND research contract. She extrapolated her study in 1982 to an Upper Triassic bioherm at Hill 4308 in the Laberge map area and reports on same in this volume.

Grant Lowey continued his fieldwork towards a Ph.D at University of Calgary on the sedimentology of Eocene conglomerates in western Yukon Crystalline Terrane. These areas of fluvial coarse clastic accumulations are of economic interest because of their gold, coal and uranium potential. In this volume, he reports on the conglomerates in the Sixtymile River and Grayling Creek areas.

Monica Smith completed another of several season's fieldwork in the continental volcanic rocks of Late Cretaceous to Paleocene age at Mount Skukum, southwest of Whitehorse. These rocks consist of an andesitic stratovolcanic facies intruded by felsic rhyolitic plugs and dykes with possibly related rhyolitic ash flows. Fractures in the volcanic and nearby basement rocks are host to epithermal precious metal quartz carbonate veins. Her research work is towards a M.Sc. degree at University of Manitoba and she reports on these rocks in this volume.

Diane Emond completed her fieldwork on the EPD stanniferous breccia on the east side of the McQuesten River and has written a preliminary report. The chlorite-tourmaline-cassiterite breccia is hosted in quartz-chlorite schists and amphibolite and is within the thermal aureole of a granitic plug. This style of mineralization is becoming more recognized as being important for tin and tungsten in the Mayo area. Part of her fieldwork was supported by Billiton Canada Ltd. and her research work towards a M.Sc. degree is being done at Carleton University.

Greg Lynch completed his fieldwork involving the mapping and sampling of the Pattison Pluton which forms the basis of his B.Sc. thesis at University of Ottawa and a report in this volume. Thesis advisor Calvin Pride participated in the field and laboratory research followup on these rocks. Major textural variations, abundant miarolitic cavities and a copper-molybdenum showing make this pluton an excellent example of a high level felsic magma chamber that may be related to copper-molybdenum porphyry type mineralization in this part of Yukon Crystalline Terrane.

Charlie Roots continued his GSC supported field studies of the Mount Harper volcanic complex in the Dawson map-area. His report discusses the style of volcanism in that part of the Ogilvie Mountains. Mount Harper is the subject of his Ph.D thesis work at Carleton University.

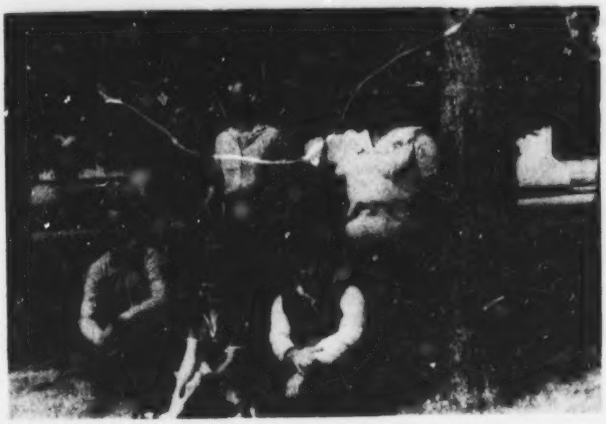
Pierre Vaillancourt completed a M.Sc. thesis at University of Western Ontario on the massive sulphide deposits at Quartz Lake, Coal River map area. Fieldwork was supported by Noranda Exploration Co. Ltd. and he reports on those deposits in this volume.

ACKNOWLEDGEMENTS

Virtually everyone in the Exploration and Geological Services Division was involved in some way in the preparation of this volume. Naturally, the most thanks go to the authors, all of whom worked hard to create manuscripts worthy of publication. The remaining major task divisions were three: Jim Morin - the Technical Papers section, Pat Watson the summaries of assessment work and Kate Grapes - the mineral occurrence and claim maps. Typing was done on in house word processing equipment by Pat Watson and Kate Grapes for the summaries and Virginia Klaver and Julie Broeren for the technical papers. Ms. Klaver's persistent effort is much appreciated.

The Drafting Services Section was instrumental in ensuring quality by promptly and efficiently producing almost all the enclosed figures, including the NTS map series. They are a much valued support team.

As the field season arrived and the volume was in last stages of production, invaluable assistance was proffered by summer student personnel - Susan Acorn, Barbara D'Silva and Kathryn Salmon. Information Officer Patti Smillie competently handles the publishing side of things after the laid out manuscript is put into her hands.



Geology Staff, 1982-83:
(standing, left to right) - Pat Watson (Staff Geologist), Steve Morison (Placer Geologist), Ruth Debicki (Placer Geologist), Virginia Klaver (Office Manager), Julie Broeren (Secretary-Typist); (foreground, left to right) - Grant Abbott (Minerals Geologist), Kate Grapes (Staff Geologist), Jim Morin (Chief Geologist).

And what would we do without our draftsmen? From left to right, Ian Stallabrass (Head, Drafting Services), Laurie Butterworth and Bob Lewis.

YUKON MINERAL INDUSTRY 1982
AN OVERVIEW

BY

J.A. MORIN, K.J. GRAPES AND R.L. DEBICKI
Exploration and Geological Services Division
DIAND, Whitehorse

SUMMARY

In 1982, mining came to a grinding halt and mineral exploration was only a shadow of what it had been. Cyprus Anvil's Faro mine stopped in June, UKHM at Elsa in July and Whitehorse Copper ran out of ore in December. The 1982 exploration expenditure was reduced to about one-third of the 1981 figure. A holding period developed characterized by several operative features: - property work was low level and few drill programs were conducted; - the work conducted was commonly restricted to the main target area and not the entire property; - the number of add-on claims was commonly minimal; - few new claims were staked, and the sizes of individual claim groups were much smaller than in previous years.

Exploration was directed mainly to three commodity groups in the following order: 1) lead, zinc, silver, 2) tungsten, molybdenum, tin and 3) precious metals. Shale hosted base metals were actively explored for in several areas: Macmillan Pass, Earn Lake, east of Rancheria and in reconnaissance fashion in southeasternmost Yukon. A sub-economic tonnage figure was released for the XY deposit at Howards Pass. Tungsten properties were active. Further drilling improved the data base at Canada Tungsten's Ray Gulch tungsten deposit and likewise trenching and bulk sampling at Union Carbide's quartz-wolframite vein and stockwork deposit at Kalzas Twins. Amax's Mactung remained in a situation hold position along with the large Logtung W-Mo deposit of Amax and Regional Resources Ltd. Amoco and Tintina Silver continued deep drilling their molybdenum porphyry at Red Mountain and found the mineralization to persist with depth. Further drilling on the Pluto molybdenum porphyry of Cominco and Getty reconfirmed the sub-economic picture generated last year. Tin exploration was more or less restricted to further drilling by Cominco in the stanniferous skarn on the JC property and D.C. Syndicate on the MUN claims. Precious metals were drilled for in Late Cretaceous to Cenozoic volcanic terranes by Agip at Mount Skukum and Archer, Cathro at Prospector Mountain. Copper was sought in the traditional areas - UKHM in the area northwest of Carmacks and Whitehorse Copper Mines in the Whitehorse Copper Belt. Minor exploration was conducted for uranium asbestos, barite, nickel and coal.

The level of placer mining activity in 1982 was reduced from the 1981 level. Most of the creeks were busy but several companies prominent during 1981 did not mine in 1982. Gold production in 1982 is about 75% of 1981 production.

OPERATING MINES

Three major mines operated during 1982: Faro, Husky-Ruby and Whitehorse Copper's Little Chief.

Cyprus Anvil

At Cyprus Anvil's Faro Mine 95 of 770 workers were laid off at the end of March due to the decline in metal prices. However, management still planned to maintain full production of approximately 10,200 tonnes of ore daily, but with further decline in metal prices, the mine was shut down indefinitely in June, 1982. Cyprus Anvil was granted an amendment to its water license in March and is now able to use its $13.5 million tailings system built at Faro last year.

The Grum and Vangorda, the largest and most economically significant deposits in the Anvil camp, underwent feasibility studies to determine their future. Together, these deposits contain an estimated 21 million tonnes of mineable open pit reserves of 3.1% lead, 4.8% zinc and 44 g/t of silver. A total of 24 NQ and BQ diamond drill holes for 5334 m were drilled on the Grum 3, 4 and Champ 5 and 7 claims. It is possible that milling may commence by the end of the 80's.

Two additional properties investigated were the DY and SWIM deposits. The DY contains an estimated 21 million tonnes of 5.6% Pb, 6.9% Zn and 85 g/t Ag. The SWIM deposit has a modest drill indicated tonnage.

United Keno Hill Mines

Due to continued operating losses in 1982, United Keno Hill Mines Limited reduced its mining operations at Elsa. Eighty-eight of its 284 employees were laid off in March. All open pit operations were shut down and milling of the existing open pit stockpiles took place during the rest of the year. Underground mining concentrated on the two highest grade mines - the Husky and the Ruby.

Trenching, 8839.2 m of overburden drilling and 1524 m of diamond drilling were conducted in the Calumet and Hector areas. Twenty overburden drill holes totalling 957.07 m were drilled on the Snowdrift 5, 22-24 and 26-29 claims in May.

All operations were suspended indefinitely in July 1982 due to the further decline in the price of silver. For the rest of the year, the property was maintained on a standby basis pending improvement in silver prices.

Whitehorse Copper

Whitehorse Copper depleted their ore reserves in 1982. Their milling rate increased from 2,040 t.p.d. in 1981 to 2,401 t.p.d. in 1982. They experienced a 10 day shutdown in February due to a failure of the hoist motor.

They drilled five diamond drill holes on the North Star property but only encountered low grade copper intersections.

Yukon Barite

Yukon's newest mine is the Samovar, Yukon Barite's TEA deposit near Macmillan Pass. It has an estimated 0.25 million tonnes of barite with a specific gravity of 4.24.

Yukon Exploration and Geology 1982, p. 4-17

MINE PRODUCTION - YUKON

JANUARY 1, 1982 - DECEMBER 31, 1982

	Cyprus Anvil* (shut down June 4)	Whitehorse Copper	United Keno* (shut down July 13)	Total
Ore Milled (tonnes)	1,635,241.38	822,611.83	50,354.81	2,254,733.21
Silver produced (gm)	28,017,224.11	6,497,695.30	34,381,342.35	67,691,666.78
Lead produced (kg)	33,905,024.94	-	888,320.18	34,793,345.12
Zinc produced (kg)	59,392,290.25	-	119,575.74	59,511,965.99
Copper produced (kg)	-	9,040,729.70	-	7,246,701.59
Gold produced (gm)	62,860.17	364,267.30	-	362,651.26

* Due to the shutdown of Cyprus Anvil and United Keno the production figures apply only for January to June and January to July respectively.

MINERAL PRODUCTION, YUKON TERRITORY

	1978*	1979*	1980*	1981*	1982*
Gold (lode)	$ 7,354,000	$ 5,835,000	$ 19,200,000	$ 53,964,000	$ 42,430,000
grams	1,026,000	523,353	908,550	3,046,000	2,858,000
Gold** (placer)	$ 4,167,000	$ 8,819,000	$ 34,799,000	55,093,400	$ 32,404,040
grams	581,346	790,949	1,646,717	2,479,935	1,842,355
Silver	$ 29,405,000	$ 47,713,000	$108,725,000	$ 69,528,000	$ 22,141,000
grams	148,000,000	125,172,604	137,565,148	172,000,000	70,000
Lead	$ 65,466,000	$104,625,000	$ 76,636,000	$ 50,706,000	$ 25,950,000
kg	80,643,000	79,744,650	70,154,178	51,651,000	35,838,000
Zinc	$ 75,481,000	$115,989,000	$ 94,137,000	$103,783,000	$ 63,264,000
kg	98,506,000	120,291,108	97,935,887	86,486,000	58,961,000
Cadmium	$ 590	---	---	---	---
kg	96	---	---	---	---
Copper	$ 18,066,000	$ 18,670,000	$ 28,504,000	$ 20,192,000	$ 14,077,000
kg	11,012,000	7,931,060	10,879,636	9,129,000	7,236,000
Asbestos	$ 32,404,000	Clinton Creek	---	---	---
tonnes	63,000	Mine Closed	---	---	---
Coal tonnes	26,000	25,356	11,634	28,933.4	---
Gross Value (excludes coal)	$232,343,590	$301,651,000	$362,001,000	$353,266,000	$200,266,040

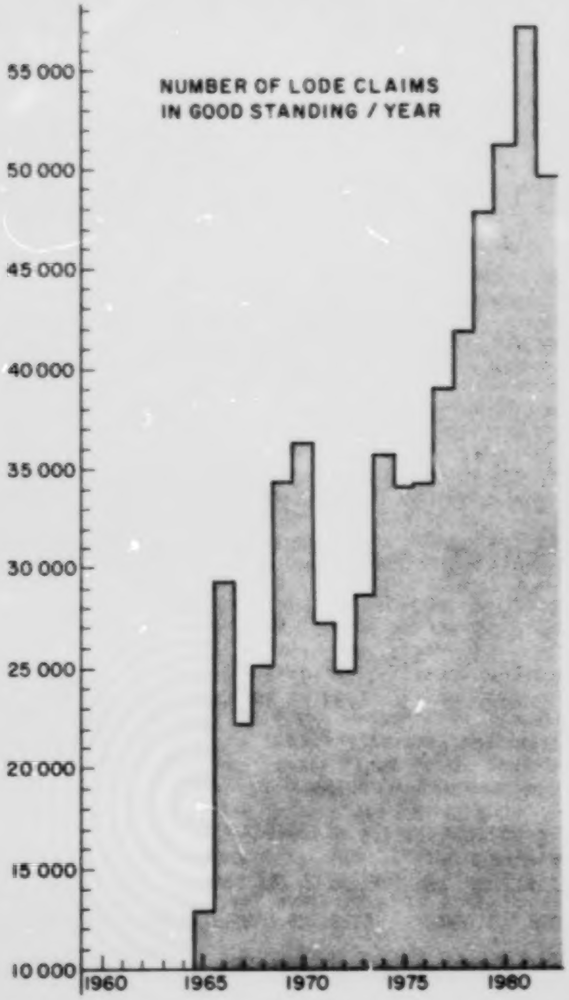
* dollar values determined using average metal price during the year, according to Canadian Mining Journal figures.

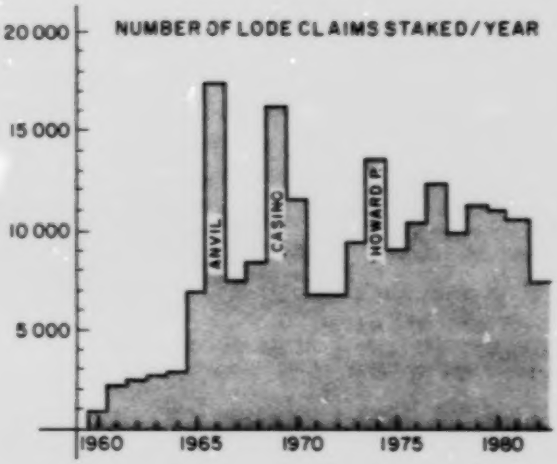
** placer gold production based on royalty paid on crude gold, adjusted to reflect fine gold content.

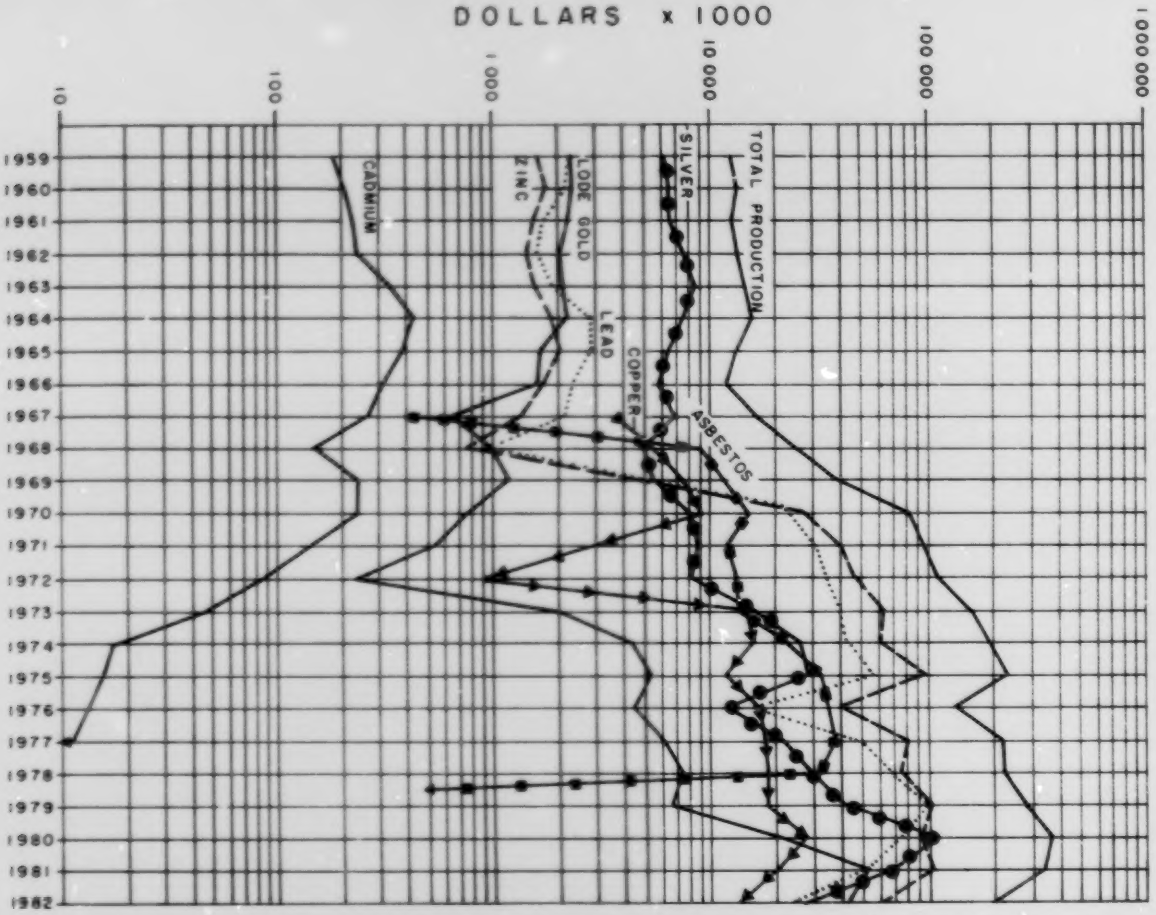
MINE DEVELOPMENT AND EXPLORATION

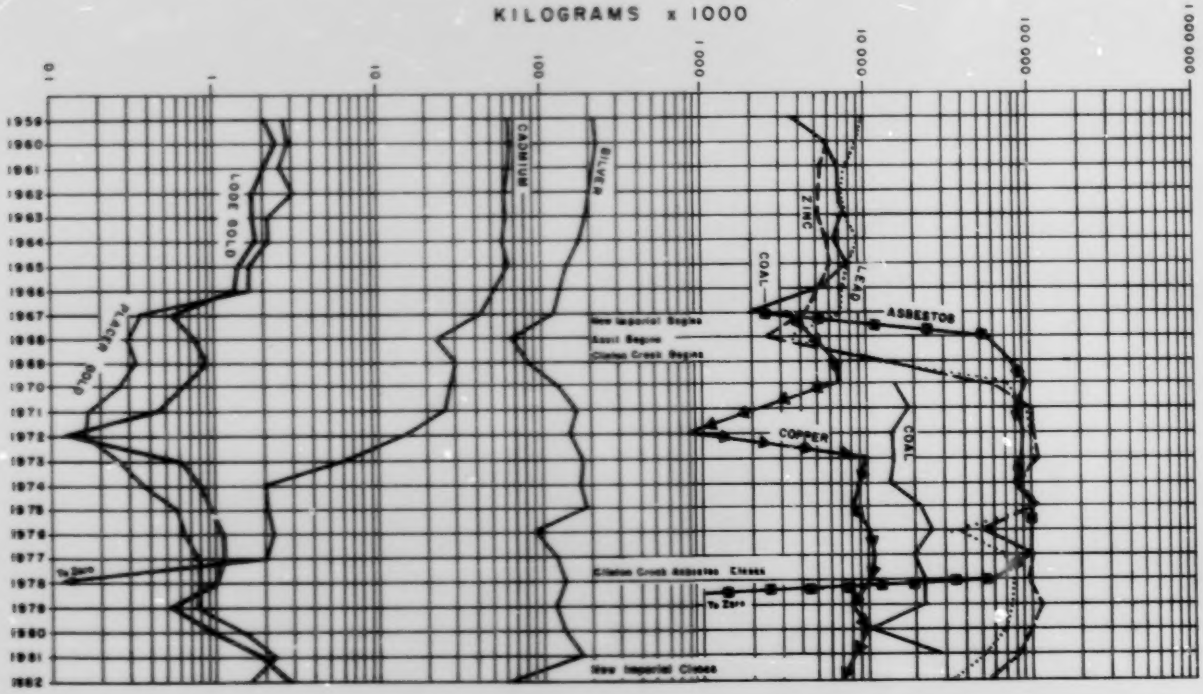
	CYPRUS ANVIL	WHITEHORSE COPPER	HUSKY	UNITED KENO HILL MINES					
				NO CASH	ELSA	RUBY	PORCUPINE	KENO	TOTAL UKHM
SINKING ADVANCES (m3)	3,646,152.02	0	0	0	0	0	0	0	0
LATERAL ADVANCES (m)	0	365.15	126.80	66.46	11.89	85.65	26.82	0	317.61
RAISING ADVANCES (m)	0	103.33	35.97	0	7.93	0	25.60	6.4	75.90
SURFACE DIAMOND DRILLING (m)	0	2,321.97							900.38
UNDERGROUND DIAMOND DRILLING (m)	0	0	364.54	0	0	363.63	160.93	0	889.10

* Information from monthly progress reports.






DOLLARS x 1000
10
100
1 000
10 000
100 000
1 000 000
1959
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
TOTAL PRODUCTION
SILVER
LODE GOLD
ZINC
CADMIUM
LEAD
COPPER
ASBESTOS


KILOGRAMS x 1000
0.1
1
10
100
1 000
10 000
100 000
1 000 000
1959
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
LODE GOLD
PLACER GOLD
CADMIUM
SILVER
ZINC
COAL
LEAD
ASBESTOS
COPPER
COAL
New Imperial Begins
Anvil Begins
Clinton Creek Begins
Clinton Creek Asbestos Closes
To Zero
To Zero
New Imperial Closes

Open cut mining commenced mid-October and continued through until mid-November, by which time approximately 8,000 tonnes had been stock piled across the river from the community of Ross River. The operation is designed to employ approximately 11 people on site as well as providing work for twelve, 15 metric tonne trucks.

Plans are for the barite to be crushed and ground to a specified size in Ross River and packed as bulk barite into two tonne wooden boxes for hauling to Tuktoyaktuk or Inuvik and be used in Beaufort Sea operations.

LEAD, ZINC, SILVER

In the western Ogilvie Mountains, Mattagami Lake Exploration located a soil geochemical anomaly on the WENDY claims (116 H 6) underlain by Permian shales. The property was geologically mapped at 1:13,000 scale and geochemically soil sampled along a grid. They also worked on their KZ claims (116 G 1) which cover a multi-element soil geochemical anomaly that is coincident with a kill zone. All claims were geologically mapped at 1:10,000 scale, soil geochemical samples were collected along a grid and about ten 1.5 m^3 trenches were blasted.

The main lead-zinc effort was focussed on the Macmillan Pass area for stratiform galena-sphalerite-barite deposits hosted in black shale of Mississippian age. The largest deposit discovered so far is the TOM (105 O 1), about 8 million tonnes of 8.5% lead and zinc each and 90 g/t silver. Further underground work addition to the existing adit proceeded during 1981 but was terminated in March 1982 and the underground workings were promptly flooded. Unfortunately, the decline was stopped short and the planned-for underground diamond drilling never took place. During summer 1982, minor geological mapping and core logging programs were conducted.

The nearby JASON deposit (105 O 1), just a few kilometres to the west, was the object of much drilling, approximately 2850 m in five holes on the south zone. Four mineralized intersections were encountered. Aberford Resources Ltd. of Calgary acquired Pan Ocean Oil Ltd. earlier this year and thus is now the major partner in the Ogilvie Joint Venture which owns the deposit. Drill results have not been released but are reported to be encouraging.

Cominco investigated stratiform mineralization on the NIDD claims (105 O 1,2) which adjoin the JASON property to the north. Sphalerite and galena occur in sedimentary rocks of the Lower Earn Group. They conducted geological mapping at 1:10,000 and 1:5,000 scales, geochemical, geophysical, trenching and diamond drilling programs. Soil samples were analyzed for Pb, Zn, Ag and Ba. Geophysical work included proton magnetometer, max-min horizontal loop EM, VLF EM and gravity surveys. About 18,000 square metres were stripped by a D6 caterpillar and four diamond drill holes (HQ, NQ) were drilled on claims NIDD 81, 83 and 78. The nearby HASTEN, BASIN and FETCH claims (105 O 1) adjoin the JASON property to the south and were optioned by Cominco from Welcome North. Geological mapping (1:5,000) indicates that the JASON favourable horizon may extend onto these claims and a soil geochemical survey resulted in a Pb anomaly that was indicated by previous Canadian Nickel Company work. On their FAN claims (105 O 1, 7), Amax collected 2500 soil samples and analyzed them for Pb, Zn, Ag, Cu and Ba.

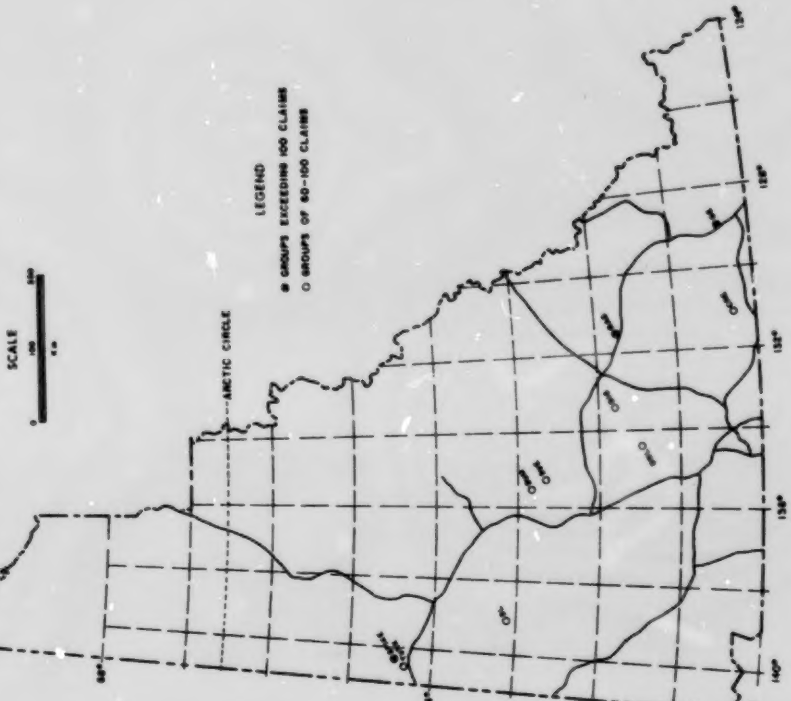
East of Macmillan Pass, Hudson Bay Exploration and Development staked the FAL claims (105 O 7) as part of a follow up on Pb anomalies determined in a reconnaissance stream sediment sampling survey. Work indicates they are underlain by early to mid Devonian chert, cherty argillite, volcanic rocks and younger Devonian shales and host a siderite showing and several gossans. Geological mapping at 1:2,000 scale and grid soil and rock geochemical sampling programs were conducted. Northwest of Macmillan Pass, the BAR claims (105 O 7) of Hudson Bay cover bedded barite showings at the contact of a chert unit with overlying Mississippian shale and siltstone. Work in 1982 consisted of soil and rock geochemical sampling (Cu, Pb, Zn, Ag, Ba), geological mapping (1:50,000) and hand trenching. Nearby, are Hudson Bay's MAC claims (105 O 7) which had similar programs of geological mapping and, soil and rock geochemical sampling. Several bedded barite bodies occur in carbonaceous argillite of the Lower Earn Group on the claims. South of the BAR and MAC claims and about 50 km west of Macmillan Pass, the SUN claims (105 O 3) of Hudson Bay cover vein and bedded barite and stream sediment anomalies generated from a reconnaissance program in 1979. In 1982, geological mapping (1:50,000) and soil, stream sediment and rock geochemical sampling programs were conducted.

Archer, Cathro and Associates worked on the TUDL claims (106 D 1) in the Keno Hill area on behalf of the ZX Joint Venture. The claims cover ground formerly held as the JACK, MARG and HEATHER claims of Canadian Superior. These latter were staked in 1965 on a Pb-Zn anomaly outlined by the G.S.C's Operation Keno and were explored in 1965-1966 by a joint venture between Canadian Superior and United Keno Hill Mines. They were subsequently restaked as the FLASH claims by Mountaineer Mines Limited and Welcome North in 1977, but no further work was conducted. In 1982, reconnaissance scale soil and rock geochemical sampling was conducted along with cleaning out of the old trenches.

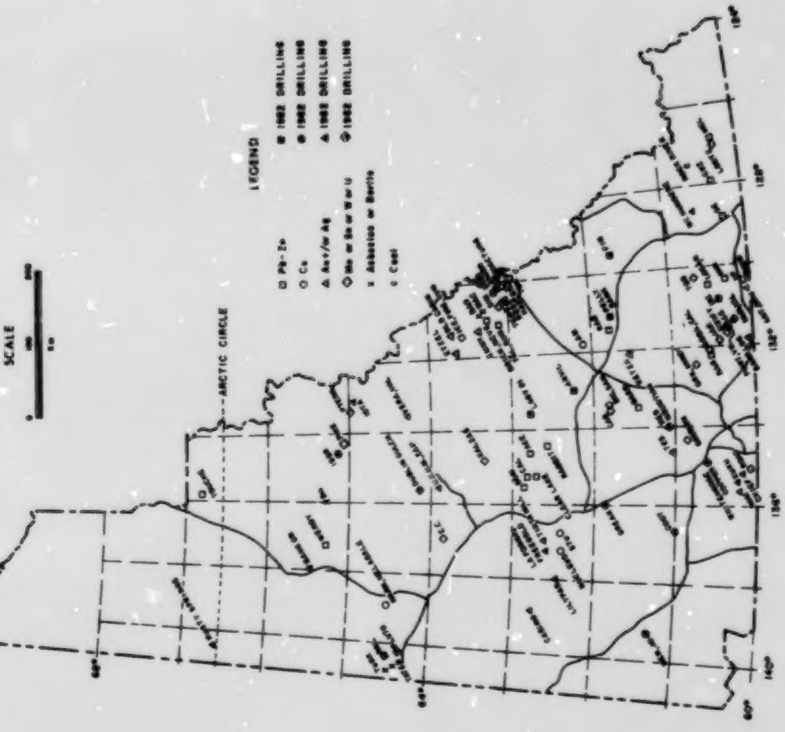
Activity in northern Tay River map area continued as Anaconda evaluated their Dromedary Mountain property (105 L 15, 16), the ACE claims and nearby CLARE, BUSH and EARN. They are underlain by tectonically imbricated Paleozoic strata including the Kechika, Road River and Earn Groups, middle Mississippian chert-siltstone and Permo-Triassic sandstone shale units. A lens of bedded barite occurs within the middle Mississippian unit. Geological mapping at 1:5,000 scale was conducted over six grids totalling 88 km of grid lines along which 3570 soil samples were collected at 25 m intervals and analyzed for Cu, Pb, Zn, Ag and selectively for Ba. Geophysical work included max-min EM, magnetometer and local gravity surveys.

Anaconda also conducted minor geological mapping (1:50,000) and soil geochemical sampling programs on the RABBIT claims (105 L 9). These are underlain by a middle Mississippian chert-siltstone unit and a calc-silicate hornfels over which a total of 590 soil samples were collected and analyzed for Cu, Pb, Zn, Ag and Ba. To the northwest, Anaconda's KAL claims (105 L 14) are underlain mainly by turbidites of the lower Upper Earn Group of probable lower Mississippian age. Geological mapping (1:5,000) and geochemical soil sampling (1790 samples at 25 m intervals analyzed for Cu, Pb, Zn, Ag and selectively for Ba and Hg) programs

YUKON MINERAL CLAIMS STAKED IN 1982


SCALE
0 100 200
km
ARCTIC CIRCLE
LEGEND
● GROUPS EXCEEDING 100 CLAIMS
○ GROUPS OF 50-100 CLAIMS
60°
64°
68°
140°
136°
132°
128°
124°

YUKON MINERAL PROPERTIES UNDER ACTIVE INVESTIGATION DURING 1982


SCALE
0 100 200
km
ARCTIC CIRCLE
LEGEND
□ Pb-Zn
○ Cu
△ Au/Ur Ag
◇ Mo or Sn or W or U
x Asbestos or Beryl
c Coal
■ 1982 DRILLING
● 1982 DRILLING
▲ 1982 DRILLING
◆ 1982 DRILLING
60°
64°
68°
140°
136°
132°
128°
124°

GROUPS OF 20 OR MORE CLAIMS STAKED IN 1982*

Number of Claims	Claim Name	N.T.S.	Company
50	MARS	95 C 13	Archer Cathro and Associates
50	DEEK	95 C 13	Kidd Creek
48	SPRUCE	95 D 7	S.E.R.E.M.
40	QUIVER	95 D 12	Archer Cathro and Associates
333	GE	105 A 2, 3, 5, 6, 7	Kerr Addison Mines
34	TOM	105 B 1	
30	CER	105 B 1, 8	
32	PARK	105 B 3	
52	SEA	105 B 3	BRX
84	CRE	105 B 3	BRX
49	A.S.	105 B 3	
24	FALL	105 B 3	
40	BEA	105 B 7	
40	SAB	105 B 7	BRX
24	SPE	105 B 7	BRX
24	MEI	105 B 7	BRX
25	MAR	105 B 7	
29	OTH	105 B 7	
20	BRX	105 B 7	
40	TOD	105 B 9	Hudson Bay Exploration
26	CAL	105 C 8	J.C. Stephen
25	MINDY	105 C 9	Newmont
35	CHIEF	105 D 3	AGIP
46	GLENLIVET	105 D 3	AGIP
40	WOOF	105 D 3	AGIP
69	OWL	105 E 8	General Resources and Savoya Resources Corp.
68	BIG	105 F 14	Hudson Bay Exploration
28	ZOO	105 G 5, 6	Amax
136	RAB	105 G 14	Hudson Bay Exploration
30	FAST	105 I 12	Hudson Bay Exploration
72	SUE	105 L 9	Getty/Essex
74	BUM	105 L 13, 14	Anaconda
32	ACE	105 L 15	Anaconda
29	SS	105 M 13	Canada Tungsten
32	TUDL	106 D 1	Archer Cathro and Associates
32	KID	115 A 3	Noranda Exploration
22	KAT	115 G 6	Halferdahl and Associates
40	JAN	115 G 6	
24	TAWA	115 I 3	BRX
72	D.L.	115 O 2	
32	OMEGA	115 P 14	Noranda Exploration
36	JA	116 B 8	
24	HARP	116 B 12, 13	
60	TURK	116 C 7	Archer Cathro and Associates
56	TATER	116 C 7	Archer Cathro and Associates
156	SPIKE	116 C 8	Noranda Exploration
62	GLAC	116 C 2	Bema Industries
24	FIRE	105 O 11	AGIP
143	BEAU	95 G 5, 12	Utah Mines
52	CAN	115 F 15	
24	JAN	115 G 6	
47	EL	115 G 6	
29	SCOT	105 D 14	

* Information gathered from District Mining Recorders' Reports, January 1, 1982 to December 31, 1982.

were conducted along with geophysical programs includng max-min EM, magnetometer and minor gravity and self potential surveys. Bedded barite was discovered in the Earn Group and several Pb anomalies in soil were determined. To the east, Anaconda also worked on their BUM claims (105 L 13, 14) which are underlain by a sequence similar to KAL. Work consisted of geological mapping (1:5,000) along 30.8 km of grid with 200 m line spacing, 852 soil samples collected at 25 m intervals along grid lines and analyzed for Cu, Pb, Zn, Ag and selectively for Ba and max-min EM, magnetometer and gravity surveys.

Also in the area, KIDD Creek Mines Ltd. conducted several surveys on their SUE claims (105 L 9) - geological mapping (1:2,500), geochemical soil sampling, hand trenching, magnetometer and max-min VLF EM programs. The property is thought to be underlain by Cambro-Ordovician metasedimentary rocks and a calc-silicate phyllite. Some geochemical and geophysical anomalies were determined.

Nearby, Welcome North optioned to Noranda the LADY DI claims (105 K 13) where stratabound massive sulphides occur in a tan-green cherty siltstone unit at its contact with Mississippian Kalzas Formation limestone. The pyrrhotite-sphalerite-galena mineralization has yielded assays greater than 19% combined lead-zinc and 380 g/t Ag. A geophysical survey was carried out.

Exploration work in the Anvil camp was concentrated on the GRUM deposit (105 K 3, 6) where Cyprus Anvil drilled 24 diamond drill holes for a total of 5,335 m of NQ and BQ core on claims GRUM 3, 4 and CHAMP 5, 7. Minor property work was also carried out by Cyprus Anvil on the TENAS CREEK claims (105 K 1) optioned from Welcome North.

BRX Mining and Petroleum Corporation carried out property work on the MEISTER claims (105 B 1), 30 km north of Rancheria. Weathered material is reported to have assayed 1.74% Pb, 7.10% Zn and up to 884 g/t Ag.

In the Frances Lake area, Cominco continued working on their FIN claims (105 H 12) which cover upper Paleozoic shale situated within a sequence of coarse clastic sedimentary rocks. A mudstone horizon has been located which is anomalous in Pb-Zn soil geochemistry. Geological mapping at 1:5,000 and 1:10,000 scales, soil geochemical sampling and a UTEM survey were conducted.

Hudson Bay investigated their RAB claims (105 G 14) north of the Pelly River which cover the transition horizon between the lower Paleozoic Mount Mye and Vangorda Formations. Work included geological mapping at 1:50,000 scale, max-min II EM ground survey and a proton magnetometer ground survey.

North of Teslin 45 km, Chevron Standard Ltd. worked on the BAR claims (105 C 8, 9), stratiform Pb, Zn, Ag, barite mineralization hosted in upper Paleozoic shale and chert. Geological mapping (1:25,000) and soil geochemical sampling programs were conducted to further define the stratigraphy, structure and distribution of mineralization.

Southwest of Ross River on Mount Cook (105 F 15), Amax and Procan Exploration worked on their GREW claims on which Upper Devonian-Mississippian fine grained clastic and volcanic rocks contain minor amounts of galena and sphalerite as veins and disseminations in chert. Geological mapping (1:5,000) and grid soil geochemical sampling programs were conducted.

Hudson Bay continued their evaluation of the Pelly Banks area (105 G 14), southeast of Ross River, where they explored for massive sulphides in highly metamorphosed allochthonous Klondike Schist-type rocks. They drilled four NQ holes for 455 m (on SHALE 40, 41, 42 and RENO 38) and three NQ holes for 250 m on EAGLE 20, 22, 63.

In 1982, reserve estimates were released on the Howards Pass property in eastern Selwyn Basin (105 I 6). Quoting a company release directly: "Placer Development Limited and Cygnus Mines Limited report that work carried out on their jointly held (51% and 49%, respectively) Howards Pass Zn/Pb property located on the Yukon-N.W.T. border has established drill indicated geological reserves calculated at approximately 125 million short tons averaging 5.4 percent zinc plus 2.1 percent lead. In addition, inferred reserves in excess of 400 million short tons are projected on the basis of known geology and limited drilling.

This mineral inventory applies to only two areas, the XY and the Anniv, where the bulk of the work has been concentrated. Limits to mineralization have not been established.

An economic analysis of higher grade mineralization localized in the XY area was recently undertaken. A drill indicated, diluted ore reserves of about 9 million tons grading 10.6 percent zinc and 5.5 percent lead was estimated for this evaluation. The evaluation concludes that underground mining and shipment of concentrate to toll smelters, under the assumptions made, would not be economically viable at this time."

The Cassiar Mountains in southern Yukon saw a flurry of activity in 1982 due to the MIDWAY Pb-Zn-Ag deposit (105 B 1). This Paleozoic shale hosted massive sulphide deposit is located only a few kilometres south of the Yukon border in northern B.C., and after 5,274 m of drilling in 15 holes this season, it is reported to still remain open to the north and south. Owners are Regional Resources Ltd. with current work financed by AMAX of Canada Limited and PROCAN Exploration Company and managed by Cordilleran Engineering. In addition to the base and precious metal mineralization, a 13 m thick barite occurrence located 600 m south of the B.C. - Yukon border has several assays in excess of 89% $BaSO_4$ with specific gravities over 4.2. Soil geochemical sampling in 1981 indicated a strong barium trend extends northward onto the Yukon claims over a distance of 2000 m, and at the north end of the trend, co-incident Pb, Zn, Ag soil geochemical anomalies are present. Work in 1982 included aerial photography and geophysics - horizontal loop pulse EM along 11 km of grid line. This EM work determined conductors co-incident with geochemical anomalies.

North of the Midway area, Regional Resources Ltd. also worked on the M.R. claims (105 B 1, 8) which cover stratiform Pb-Zn-Ag mineralization reported to be hosted in graphitic, locally calcareous phyllites of lower Cambrian age. They conducted geological mapping (1:10,000), soil geochemical sampling and trenching (25 m3) programs which resulted in an extension of the soil anomalies and the mineralized horizon. Northwest of the M.R. claims, the LOGAN claims (105 B 7, 8) of Regional Resources cover a vein system that cuts strongly sericitized granodiorite. The main vein is up to 1.5 m wide and consists of massive to disseminated sphalerite in a quartz gangue with local intergrown chalcopyrite, arsenopyrite, galena and cassiterite with variable silver content. Work in 1982 included prospecting, soil geochemical sampling and hand trenching. A float train of sphalerite boulders was located 400 m SW along strike from the main vein showing and several anomalous Zn, Ag and Sn zones in soil were determined elsewhere on the property. A grab sample of the massive mineralization is reported to assay 38.25% Zn, 0.01% Pb and 25 g/t Ag.

Sulpetro Minerals Limited conducted geological mapping and geochemical survey programs on the JONI claims, east of the MEL lead-zinc-barite deposit (95 D 6) northeast of Watson Lake.

East of Watson Lake, Serem Ltd. conducted geological mapping, prospecting and stream sediment geochemical sampling programs on the LOOTZ claims (95 D 7). The property is underlain by sedimentary and volcanic rocks of Paleozoic age which host minor vein-type galena mineralization.

Exploration interest has surfaced in the base metal potential of sedimentary rocks in the Coal and La Biche River areas in southeastern Yukon. This area has been only sporadically investigated in the past and is one of the few remaining patches of Selwyn Basin rocks that has not been the object of much exploration. Archer, Cathro and Associates were the main investigators in 1982, conducting both reconnaissance exploration and detailed property work on the MARS, TRANZ, RUSH, QUIVER, AUP, QUO and CUZ claims, the first three being financed by Kidd Creek Mines and the latter four by the ZX Joint Venture. The MARS and RUSH claims (95 C 13) are underlain by rocks of the Lower Earn Group and the TRANZ claims (95 C 5) by Road River shale. Geochemical anomalies on these properties were evaluated by reconnaissance scale geological mapping and geochemistry. The QUIVER claims (95 D 5, 12) cover very poorly exposed interbedded limestone, phyllite, quartzite and coarse grit of the Hadrynian Grit Unit. A previously known geochemical anomaly was evaluated by grid soil and selected rock geochemical sampling programs, but results were inconclusive. Similar rocks and another previously known geochemical anomaly occur on the AUP claims (105 A 8) on which geological mapping (1:20,000), grid soil and stream sediment geochemical sampling programs were conducted. Again, results were inconclusive. The QUO claims (95 D 6) are underlain by very poorly exposed Lower Cambrian clastic sedimentary rocks. Previous reconnaissance work had determined a soil and stream sediment geochemical anomaly which was investigated by further more detailed geochemistry. However, the previous anomalies were not reproducible. On the CUZ claims (95 D 5), interbedded phyllite, limestone, quartzite and coarse grit of the Grit Unit are cut by several small shear zones. A previously known geochemical anomaly was investigated by 1:20,000 and 1:5,000 scale geological mapping and grid soil, selected rock and stream sediment geochemical sampling programs. A zone of altered rocks cut by numerous small shears and coincident with a geochemical anomaly was determined.

A large group of claims north of Watson Lake, the GE claims of Kerr Addison Limited (105 A 2, 3, 6, 7), was evaluated by geological, geochemical and geophysical programs in 1982 by George R. Kent and Associates Ltd. Mapping was done at 1:50,000 scale and stream sediment, soil and rock geochemical sampling programs were conducted, in addition to Crone J.E.M., C.E.M. and magnetic surveys.

TUNGSTEN, MOLYBDENUM, TIN

Tungsten exploration was prominent in 1982.

Canada Tungsten Mining Corporation continued working on their Dublin Gulch project north of Mayo (106 D 4), a scheelite deposit on Ray Gulch with a previously estimated tonnage of 5,454,546 tonnes grading 0.8% WO_3. Scheelite mineralized marble horizons are interbedded with quartz-biotite schist country rocks intruded by granodiorite. Programs of geological mapping, soil geochemical sampling, EM-16 geophysical survey, trenching and diamond drilling were conducted. A total of 19 trenches was dug and 3 diamond drill holes (NQ core) totalling 750.6 m on the ALEC AND MAR claims. The diamond drilling revealed weakly tungsten mineralized skarn horizons located stratigraphically below the main deposit discovered in 1979.

West of Mayo in the Clear Creek area (115 P 14, 15), Canada Tungsten also worked on their Westridge project, the C.C. claims. Scheelite occurs in skarnified marble horizons interbedded with barren biotite-quartz schists, gold occurs in a stockwork vein system in granitic intrusive plugs and tin mineralization in zones of greisen and brecciation above the granitic plugs. Programs of geological mapping, soil and stream sediment geochemical sampling were conducted on claims C.C. 782 to C.C. 919.

Southeast of Mayo on Kalzas Mountain (105 M 7), Union Carbide Exploration Company worked on the WOLF, DAVID, PAT and BLACKIE claims. Mineralization consists of wolframite, scheelite and cassiterite in quartz veins and as stockwork fracture fillings in quartzite and meta-conglomerate of the Grit Unit. No intrusive rock has been located on the property. Geological mapping (1:2,000), rock geochemical sampling for tungsten and tin along 200 metre spaced grid lines, overburden and bedrock trenching programs were conducted. The rock geochemistry, prospecting and geological mapping indicate broad areas of tungsten mineralization and the trenching suggests bedrock grades of less than 0.1% WO_3.

In the Ethel Lake area south of Mayo (115 P 8, 105 M 5), Amax evaluated their DRILL claims by geological mapping (1:12,000) and geochemical stream sediment programs. Mineralization consists of scheelite in widely spaced quartz-sericite-pyrite ± tourmaline veins hosted by sandstone of the Hadrynian 'Grit Unit.' Amax also prospected and geologically mapped (1:12,000) their DOPE claims near Clarke Peak southeast of Mayo (105 M 3). A weak gossan occurs in Devonian green chert pebble conglomerate on the property.

Hudson Bay Exploration and Development worked on several tungsten properties. The most advanced property is Risby Tungsten on the CAB claims west of Ross River (105 F 14), where a tonnage of 2.7 million tonnes of 0.81% WO_3 in two parallel zones is estimated. Scheelite mineralization occurs in two garnet diopside skarn horizons parallel to the contact with a Cretaceous quartz monzonite plug intrusive to the Lower Paleozoic sedimentary country rocks. In 1982, a program of minor geological mapping at 1:2,500 scale was conducted. They also worked on their nearby

BIG and SAM claims (105 F 14), which were located as a result of regional stream sediment geochemical sampling and prospecting. Scheelite occurs disseminated in massive pyrrhotite and garnet diopside skarn bands adjacent to a quartz monzonite plug. Geological mapping at 1:25,000 and locally 1:2,000 scales, local EM-16 and magnetometer surveys and minor hand trenching were conducted.

Noranda Exploration drilled nine holes totalling 719.4 m on their RAIL property northwest of Dawson City (116 C 8). Scheelite-bearing skarn occurs where marble is in contact with an intrusive granodiorite to biotite quartz monzonite stock.

West of Macmillan Pass, Hudson Bay worked on their SIM claims (105 O 2) where the target is scheelite mineralization associated with a Cretaceous pluton intrusive into Mississippian siltstones, sandstones and shales. Geological mapping (1:2,000), soil and stream sediment geochemical sampling programs were conducted. They also worked on the Moraine property on the COOT claims, south of Aishihik Lake (115 H 2). Pyrrhotite, chalcopyrite, molybdenite and molybdoscheelite occur erratically in skarn and marble exposed by trenching over several hundred metres along the contact with a quartz diorite stock. Soil geochemical sampling, magnetometer and EM-16 surveys were carried out and several pits were dug through shallow overburden to bedrock. Hudson Bay also worked on the TOD claims northwest of Watson Lake (105 B 9) which were staked as a result of a regional stream sediment geochemical sampling and prospecting program. Trace scheelite occurs in float derived from a poorly exposed garnet diopside skarn within Paleozoic biotite schist close to the contact with a biotite quartz monzonite stock. In 1982, a soil geochemical sampling program was carried out over 10 claims.

North of Rancheria, Serem Ltd. worked on the SOURCE claims (105 B 11) which are underlain by metamorphic rocks of the 'Grit Unit' intruded by granitic rocks of the Cassiar Batholith. Scheelite mineralization occurs in skarn near the contact with the intrusive rocks. During 1982, prospecting, rock and stream sediment geochemical sampling and preliminary geological mapping were conducted.

Amoco Canada Petroleum Co. Ltd. and Tintina Mines Ltd. continued evaluating the Red Mountain deposit east of Whitehorse (105 C 13, 105 F 4). A small, quartz monzonite porphyry stock has intruded and hornfelsed shales of the Big Salmon Complex. Both the quartz monzonite porphyry and hornfels were cut by a stong, multiple phase, quartz vein stockwork, stages of which were accompanied by molybdenite mineralization. Grade generally increases with depth and a substantial tonnage assaying +0.3% MoS_2 is indicated between 500 and 1,000 metres depth. Late, barren, acid dykes cut off the northern portion of the mineralized zone. The 1982 program consisted of four diamond drill holes (HQ, NQ core) varying in depth from 860 m to 1,119 metres on claims BUG 1, 3, 5, 10.

Cominco conducted further drilling on their PLUTO porphyry molybdenum deposit northwest of Dawson (116 C 8). The property is underlain by quartz mica schist intruded by a Late Cretaceous porphyry stock. Veinlets of quartz and sericite with molybdenite, wolframite and pyrite occur in the quartz porphyry plug.

In eastern Selwyn Basin, AGIP Canada Ltd. continued working on their Emerald Lake property - the ICE, FIRE and SUN claims (105 O 11). Uranium, copper, molybdenum, gold and tungsten vein-type mineralization occurs in the Emerald Lake intrusion and adjacent hornfelsed sedimentary rocks. Geological mapping (1:10,000 scale), rock chip and talus geochemical sampling programs were conducted and two trenches for a total of 40 m^3 were dug.

The DC Syndicate continued exploring their JC property in the Seagull Batholith (105 B 4). Mineralization consists of a stanniferous skarn situated at the contact of limestone and quartz monzonite. The easterly extension of the skarn was traced by 5 diamond drill holes totalling 731.7 m. Structural complications due to cross faulting were encountered.

J.C. Stephen Explorations Ltd., acting as manager for the DC Syndicate, explored the ABBA claims (105 C 9) east of Whitehorse for their tin potential. Complex skarn zones occur near the base of a sedimentary sequence intruded by porphyritic granite and pegmatite near the west contact of the Hake Batholith. Geological mapping at 1:2,400 and locally 1:1,200 scales, soil geochemical sampling and magnetometer survey programs were carried out. A small skarn zone with low tin content and magnetic indicated down dip extension was determined. On the nearby JAR claims (105 B 5), high tin and zinc geochemical anomalies are associated with small skarn zones in sedimentary rocks close to the Hake Batholith contact. Work consisted of 1:31,680 scale geological mapping and rock, talus and soil geochemical sampling programs.

Two tin prospects associated with the Seagull Batholith, the ROAD claims and the MUN claims (105 B 3) were investigated by the D.C. Syndicate. On the former, low grade tin mineralization occurs in a magnetite bearing skarn and 1982 work consisted of minor geological mapping (1:1,200 scale) and a magnetometer survey. The MUN claims bear low grade tin and tungsten mineralization related to small skarn zones above the Seagull Batholith. In 1982, two diamond drill holes (BQ core) were drilled, one for 76.2 m on MUN 77 and the other for 77.7 m on MUN 79.

Northeast of Teslin, D.C. Syndicate worked on their FF claims (105 C 8) which cover the west contact of the Hake Batholith biotite granite with sedimentary rocks of Paleozoic age. Several skarn bodies are targets for tin-tungsten mineralization. Geological mapping (1:5,000), rock geochemical sampling and selected magnetometer profiles were done in 1982.

GOLD, SILVER, (LEAD, ZINC)

Precious metals were again a major interest, most targets being somehow associated with either Late Cretaceous or Cenozoic plutonism.

The largest program was maintained by AGIP Canada Ltd. on their Mt. Skukum property (KUKU, CHIEF, WOOF claims) (105 D 3) where 29 holes were drilled (HQ, NQ, BQ core) totalling 3,325.6 m. Property work included geological mapping (1:10,000), soil and rock geochemical sampling and ground magnetometer surveys. Precious metal mineralization is associated with fissure filled veins hosted in continental volcanic rocks of late Cretaceous to early Cenozoic age. Twenty km to the west, on the east side of Primrose Lake, minor property work was carried out by Canadian Nickel Company Limited on the RAM claims (105 D 4) where zones of argillic alteration are associated with faults within a porphyritic rhyolite plug. Geological mapping (1:5,000), trenching and rock geochemical sampling programs were carried out. To the south, in the northwest quadrant of the Eocene Bennett Lake Cauldron, AGIP staked the GLENLIVET claims as a geochemical target (105 D 3).

Northwest of Whitehorse on the south side of Teslin Mountain, Canadian Nickel Company Limited investigated an epithermal vein stockwork alteration zone 100 m by 50 m in size on the TES claims (105 E 2). The zone contains chalcedony veins, jasperoid veins, silicified breccia, calcite and clay minerals and is hosted in a Tertiary porphyritic diorite.

On the south side of Mt. Byng, AGIP worked on their GAMMON claims (105 D 16) which are underlain by late Cretaceous continental volcanic rocks intruded by a plug of hornblende syenite. Geological mapping (1:10,000) and soil, stream sediment and rock geochemical sampling programs were conducted.

Golden Slipper Resources Inc. and Logan Mines Ltd. prospected and trenched a geophysical anomaly 500 m from a previously known showing on the Jubilee property near Marsh Lake (105 D 1). Gold, silver and copper mineralization is reported in three of the trenches, the best assay being 6.72 g/t Au, 56.91 g/t Ag and 1.47% Cu. The previously known mineralization consists of pyrite and arsenopyrite lenses within a limonitic shear zone in Cretaceous(?) volcanic rocks.

West of Carmacks, Archer, Cathro and Associates Ltd, investigated several properties for their precious metal content. Seven drill holes totalling 637 m were drilled on the LILYPAD property (115 I 5), where veins fill fissures in volcanic rocks of late Cretaceous age intruded by a pink syenite plug. Geological mapping and geochemical programs were also conducted on their NUCLEUS (115 I 6), NITRO (115 I 6), NARNIA (115 F 9) and NAIAD (105 D 3) properties.

On Freegold Mountain, Arctic Red Resources worked on their Laforma deposit (115 I 6) where reserves were estimated at 62,220 tonnes grading 15.08 g/t Au at the cessation of mining operations in 1966. They carried out underground mine rehabilitation and conducted underground drilling in the fall to prove up additional reserves. Mineralization consists of a precious metal-quartz fissure filling in early Mesozoic granitic rocks.

Nearby to the east on Tinta Hill (115 I 7), Silver Tusk Mines Ltd. and Panther Mines Ltd. proceeded with their underground exploration of several precious base metal quartz veins hosted in granodiorite. Previous work in 1981 was on the No. 1 and No. 2 veins which are exposed for 213.4 m on the No. 2 portal level. Sampling results in the No. 2 portal are as follows:

Vein	3W	4W
Length (m)	31.1	35.7
Average Width (m)	0.61	0.53
Au g/t	7.5	27.7
Ag g/t	118.6	695.5
Cu (wt %)	0.77	3.56
Pb (wt %)	1.3	6.53
Zn (wt %)	3.77	6.82

Eastern Selwyn Basin is a relatively new area that is being explored for precious metals. The ROSS claims (105 O 1) of Hudson Bay Exploration and Development Co. Ltd. are about 25 km southwest of Macmillan Pass and are underlain by sedimentary rocks intruded by a felsic dyke. Mineralization consists of vugs and stringers of arsenopyrite associated with clay and sericite altered areas within the dyke. Programs of geological mapping (1:50,000), and rock geochemical sampling of 9 small hand trenches were conducted. Forty km west of Macmillan Pass, a similar target was investigated by AGIP Canada Ltd. on the BRICK and NEVE claims (105 O 7). There, quartz, realgar, stibnite veinlets occur within phyllically altered quartz porphyry dyke intrusive to shale and siltstone. Geological mapping (1:10,000), soil and rock geochemical sampling and ground magnetometer survey programs were conducted. In the Old Cabin Creek - Emerald Creek area in the Rogue Range of the Hess Mountains, Union Carbide Exploration Corporation conducted geological mapping programs on three claim groups, 1:10,000 scale on the OLD CABIN (105 O 11, 12) and EMMY (105 O 6) claims and 1:20,000 scale on the ETZEL claims (105 O 12). Low grade gold values are associated with silicified hornfels and highly fractured hornfels with quartz-pyrite-arsenopyrite veinlets near the margins of Cretaceous granitic plutons.

On the Ketza River in the Pelly Mountains, Iona Industries Inc. conducted a geological mapping program at 1:5,000 scale on the KEY 18 and 3 claims (105 F 9). Minor underground production on a sporadic basis has taken place over the past few years on these argentiferous galena veins hosted mainly in Paleozoic sedimentary rocks.

The Logjam property (105 B 4) of A.M.P. Exploration was explored in 1981 by underground drifting 14.3 m on the #4 vein in the lower adit on the 5150 level. Both Pure Silver and A.M.P. financed 1982 work which consisted of repairing and building the access road from the Logtung property, installing a new camp, legal claim and control surveys and sampling of the vein. Precious and base metal mineralization occurs in a steeply dipping quartz-arsenopyrite-galena-sphalerite vein system that cuts a diorite dyke about 300 m wide. The veins are located on the periphery of the Logtung tungsten-molybdenum porphyry deposit, to which they are probably related.

Canada Tungsten Mining Corporation Ltd. continued working on their Keno Project - the ZAP, RAILROAD, ARC and WERNECKE claims (105 M 13, 14). Silver-bearing galena veins occur in vein faults cutting metasedimentary rocks consisting of massive quartzite, interbedded graphitic schist and minor greenstone units. An airborne electromagnetic survey was conducted over the area and 15 overburden drill holes were drilled.

Archer, Cathro and Associates mined 63.683 tonnes of high grade silver mineralization from the Sadie-Ladue vein system on Keno Hill. The ore graded 5481 g/t Ag, 16.64% Pb and 4.06% Zn.

Cima Resources Limited extended reserves and outlined a second deeper horizon by drilling three holes on their Mt. Hundere property (105 A 10) north of Watson Lake. Prior drill indicated reserves were 263,200 tonnes grading 10.14% Pb, 11.18% Zn and 133.03 g/t Ag. Mineralization consists of coarse grained galena, sphalerite and calc-silicate minerals in a gently dipping manto within a mixed carbonate-clastic sequence in the Hadrynian Grit Unit.

Prism Resources had a much reduced program on their Vera property (106 C 5) at Rusty Mountain north of Mayo. Underground chip sampling in 1981 gave the following numbers:

	Length(m)	Width(m)	Silver(g/t)	Lead(%)
West Zone	131.1	3.1	696.3	6.25
East Zone	148.4	1.8	960.3	7.3

In 1982 they concentrated on surface prospecting and trenching which resulted in discovery of a float train 213 m west of the Vera portal that may be an extension of the Vera vein. Five km south, a new vein was discovered consisting mainly of tetrahedrite disseminated in dolomite. One sample across 0.92 m assayed 3% Cu, 0.25% Pb, 0.76% Zn, 8073 g/t Ag and another across 2.4 m, 0.83% Cu, 0.14% Pb, 0.65% Zn and 2040 g/t Ag.

In Wernecke Mountains near Dolores Creek, Texaco Canada Resources Ltd., conducted property work on their IOTA claims (106 C 13, 14). They are underlain by Helikian clastic and carbonate sedimentary rocks intruded by a breccia body and mineralization consists of precious and base metals in a quartz-carbonate-sulphide vein.

In the northern Ogilvie Mountains, a silver-rich vein system in Paleozoic sedimentary rocks, the Rusty Springs property, was further investigated by the diamond drilling of 359 m. A vein in the order of 6m wide is reported to have been determined.

Klondike Silver Mines further explored and trenched galena-tetrahedrite veins on their ANT claims east of Rancheria (105 B 2). A small tonnage of high grade ore was mined from the property.

COPPER

In the Whitehorse Copper Belt, Whitehorse Copper Mines diamond drilled a skarn target - the North Star (105 D 11), a roof pendant of limestone, quartzite and skarn in diorite. A total of 2606.7 m (HQ core) was drilled and scattered low grade copper intersections were encountered.

United Keno Hill Mines Ltd. conducted further work on their claims northwest of Carmacks (115 I 6, 7), the HI, FIL, STU, and NOON CLAIMS. The copper mineralization in gneisses was explored by bulldozer trenching, HI - 19,564 m^3, FIL - 6,297 m^3, STU - 13,835 m^3 and NOON - 9,222 m^3. Malachite mineralization was discovered in bedrock in trenches on the HI and STU claims, but nothing of interest on the FIL and NOON claims.

Northeast of Teslin, J.C. Stephen Explorations worked on the CAL claims (105 C 8) for D.C. Syndicate. Previously staked as the SURE THING and JACKALOO, copper-silver mineralization is associated with small skarn zones near the contact with the Hake Batholith. Geological mapping (1:31,680) and talus geochemical sampling programs were conducted.

North of Teslin, the D.C. Syndicate worked on the ORK claims (105 C 9) which are underlain by sedimentary rocks intruded by leucogranite and pegmatite. Mineralization consists of massive pyrrhotite and chalcopyrite in conformable beds interbedded with quartzite. Work in 1982 consisted of geological mapping (1:5,000), magnetometer and max-min electromagnetic surveys and soil geochemical sampling (Sn, W, Cu Zn).

Mattagami Lake Exploration worked on three copper properties in northern and central Yukon. The TOUCHE claims in the northern Richardson Mountains (106 L 13, 116 I 16) contain minor sphalerite, chalcopyrite and galena in a vein system cutting Road River shales and Cambrian clastic rocks. Work in 1982 consisted of geological mapping (1:10,000), grid soil geochemical sampling, EM 16 surveys and about 16 blasted pits on grid sites. The work resulted in the definition of soil geochemical anomalies and the location of several minor veins. The MELA and DALE claims northeast of Dawson (116 B 7) contain chalcopyrite-bearing quartz-siderite veins cutting PreCambrian phyllites. Work consisted of geological mapping of the eastern claims at 1:10,000 scale and evaluation of the veins' potential. North of Dawson, the MARN claims (116 B 7) cover a chalcopyrite, scheelite-bearing skarn developed within Permian limestone beneath a sill-like protrusion of the Cretaceous Mt. Brenner Stock. Work consisted of geological mapping of the southern half of the claim block at 1:5,000 scale.

East of Ross River, SMD Mining Co. Ltd. worked on their AM claims (105 J 3, 4), which are underlain by a granodiorite intrusion and related porphyry dykes in fine grained clastic sedimentary rocks. Quartz vein stockwork zones with Mo-Cu-Ag mineralization are present. Programs of detailed geological mapping, soil geochemical sampling and a ground magnetic survey were conducted.

NICKEL

Halferdahl and Associates Ltd. worked on the Bur property for the Bur Syndicate. The claims WEN, JO, etc. are located northwest of Kluane Lake (115 G 6) and cover a thick mafic to ultrafmafic sill. Geochemical survey and diamond drilling programs were conducted. Geochemical anomalies were determined at or near the lower contact of the sill and 3 drill holes (BQ) totalling 273 m were drilled on claims WEN 3, 5 and JO 6.

URANIUM

A minor amount of uranium exploration was conducted in 1982. Uranerz Exploration and Mining Limited conducted geological mapping and geophysical programs south of Carmacks over the GREAK claims (115 H 16) that they co-own with the Central Electricity Generating Board of London, England. Low grade uranium mineralization is associated with clay mineral alteration in a minor shear zone and major fracture system.

Archer, Cathro and Associates Ltd. worked on several claim groups in the Wernecke Mountains on behalf of the Wernecke Joint Venture. Copper, gold, uranium mineralization associated with Proterozoic diatreme breccia bodies is the general target. Geological mapping and geochemical sampling were conducted on the PIKE (106 E 1), DEMON (106 E 2) and APE (106 C 13) claims. In addition, a geophysical survey was conducted on the PIKE claims and geological mapping only on the FLAT (106 E 4). Eight diamond drill holes were drilled for 1044.5 m on the IGOR (106 E 2) claims.

ASBESTOS

Archer, Cathro and Associates worked on the TURK and TATER claims for Brinco and Exploram. The TURK claims (116 C 7) are located along Easter Creek northwest of the Clinton Mine airstrip and cover compound asbestos veins up to 1.3 cm wide hosted within light apple green, moderately to highly sheared serpentinite. A fibre dispersion survey was conducted which consisted of collecting soil samples in order to measure their asbestos content. Two bulldozer trenches, 50 m and 100 m long respectively, were dug into a fibre dispersion survey anomaly and moderate to highly sheared serpentinite and red quartz-carbonate rocks were exposed. The TATER claims (116 C 7) are located on the northeastern side of Clinton Creek. Several serpentinite bodies that are hosted within graphite and chlorite schists are highly sheared or altered to quartz-carbonate. Asbestos fibres up to 1 cm long are present at several localities in the serpentinites. 1982 work consisted of a fibre dispersion survey and two shallow bulldozer trenches about 50 m and 150 m long respectively.

BARITE

Mattagami Lake Exploration worked on two claim groups with barite mineralization - the HEIDI and BANG-ON. In the Hart River area (116 H 6), the HEIDI claims host barite veins within Road River Formation limestone. Detailed geological mapping was conducted at 1:50,000 scale. The BANG-ON claims near the Ogilvie River (116 G 8) also host barite veins within Road River Formation limestone and they were similarly geologically mapped and prospected.

COAL

Sulpetro Minerals Limited conducted a gravity survey on their Rock River Coal Licences northeast of Watson Lake (95 D 11, 14). The accumulation of sub-bituminous Tertiary coal is estimated to be approximately 50 million tonnes.

MISCELLANEOUS PROGRAMS

East of Watson Lake, Serem Ltd. worked on their SPRUCE claims (95 D 7) with programs of geological mapping (1:31,680, 1:63,360), stream sediment and soil geochemical sampling and a magnetometer survey.

North of Dawson City, Mattagami Lake Exploration geologically mapped their TAK claims (116 B 10) at a scale of 1:10,000. The claims are underlain by an east-trending clastic sedimentary sequence ranging in age from Cambrian to Cretaceous that is intruded by numerous syenite and lamprophyre dykes.

South of Dawson City, Eldorado Nuclear Ltd. conducted geological mapping (1:5,000) and soil, stream sediment, pan heavy mineral concentrate and rock geochemical sampling programs.

RECONNAISSANCE EXPLORATION

The level of reconnaissance exploration, similar to the low activity in property evaluation, was much reduced from that in 1981. Lead, zinc and silver were sought for with regional prospecting and stream sediment, rock and soil geochemical sampling methods in the Macmillan Pass area and in the Pelly River area southeast of Ross River by Hudson Bay Exploration and Development, in the Misty Creek embayment north of Macmillan Pass by a Kidd Creek Mines - Enterprise Exploration Joint Venture, in the Tay River area northwest of Faro by Anaconda and in southeast Yukon by Utah Mines Ltd.

Amax conducted a reconnaissance program for tungsten in the Niddery Lake and Sekwi map areas (105 O P). A regional search for copper by United Keno Hill Mines northwest of Carmacks led to the staking of the TOOT and POON claims. Uranerz prospected for uranium in south central Yukon and Homestake for precious and base metals in much of Yukon.

PLACER MINING

The placer industry operated at a reduced level during 1982. The number and size of mining operations, and the amount of gold produced declined. Exploration, staking, and evaluation activities also declined. Decrease in the price of gold caused recession of the industry. From a value of approximately $670.00 U.S. per ounce in October 1980, the price fell throughout 1981 to a low of approximately $310.00 U.S. per ounce in June, 1982. At that time, the start of the 1982 mining season, it seemed possible that the price might fall even further.

Mining costs on properties with higher than average gold contents and gold fineness, and with slightly lower than average mining costs are approximately $190.00 per ounce of gold produced. Mining costs on properties with average gold contents and gold fineness, and with average mining costs are approximately $345.00 per ounce of gold produced. Considering that these mining costs do not include capital costs and financing charges, it is not surprising that some mining operations were restricted and others curtailed when faced with the gold prices current in spring 1982.

The numbers of placer mining related water use authorizations issued during various years provide an indication of the relative levels of mining activity during those years. There were 194 such authorizations issued in 1979, 317 in 1980, and 365 in 1981. There were 324 issued by mid September during 1982. Of the 324 authorizations issued, approximately 225 covered active mining operations.

There was a reduction in the number of large individual mining operations along with the reduction in total number of mining operations. During 1979, nine operations had 10 or more employees. There were 15 such operations in 1980, and about 20 in 1981. In 1982, there were eight.

Several companies prominent during 1981 did not mine in 1982. Teritorial Gold Placers Ltd., Goldmark Minerals, and Peter Kiss Oil Field Construction Ltd. had mining operations at three or more sites each during 1981, but were not active during 1982. Gold Run Investors, Teck Corp., and Nugget Drilling had the largest individual mining operations in 1981. They did not mine during 1982, although Teck did stripping in preparation for future mining, and Nugget Drilling did exploratory work. Territorial Gold Placers and Gold Run Investors were both in receivership in 1982, after being victims of falling gold prices in 1981.

Mining operations active during 1982 provided approximately 270 man-years of work for 650 employees. The secondary impact of the industry resulted in approximately 375 man-years of additional work for 760 employees in Yukon, and in further work outside the territory.

Mining was carried out in the Sixtymile, Klondike, Clear Creek, Mayo, Burwash and Carmacks regions, as well as in other widely distributed areas. Mining and processing methods in use during 1982 differed little from those used in 1981. Attention was paid to waste water quality in anticipation of standards to be established for the 1983 season. Sizing of gravel prior to sluicing was done at an increased number of operations in an effort to achieve optimum gold recovery with minimum use. More, and larger settling ponds were constructed at many mine sites.

According to royalty records, gold production between January and July 1982 was lower than for the same months of 1980 and 1981. However, production between August and December 1982 was higher than presaged by the January to July figures. This higher than predicted production between August and December may be related to the increase of the price of gold to $400.00 U.S. per ounce in August. Production may have been spurred, or gold held in reserve may have been sold due to the increased price. Total production for the year is 1,842,355 grams of fine gold, virtually the same as 1980 production, or 75% of 1981 production.

Yukon placer gold production is significant in terms of national gold production. It has climbed from 0.19% of total Canadian gold production in 1970 to 3.77% in 1980 and up to 5.0% in 1981. However, it declined in 1982 to 2.9% of total Canadian production.

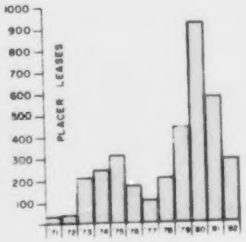
Exploration activity decreased during the year. The low price of gold during the first eight months of 1982 provided little incentive for exploration. The most notable discovery of the season was the identification of an auriferous deposit of White Channel type gravel on Paradise Hill, Hunker Creek, approximately 1,100 m away from the creek and previously worked deposits of the same type.

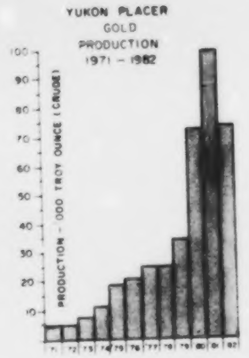
Staking activity also decreased during 1982. There were 3,896 new claims and 261 new leases staked in 1982, compared with 6978 new claims and 510 new leases during 1981, and 3,558 new claims and 895 new leases during 1980. Most of the activity during 1982 was restaking of lapsed claims and leases, and conversion of leases to claims. Little previously unstaked ground was staked.

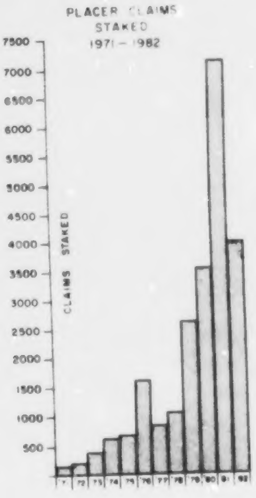
The total line distance of claims and leases held in good standing in 1982 decreased during the year. This decrease was mainly due to the lapsing of more than 300 leases staked two years earlier at the height of the rush to acquire placer properties.

Evaluation activity also decreased. Drilling was done on fewer properties than in 1981. Where it was done, it was done on a local scale to evaluate individual deposits rather than on a reconnaissance scale to evaluate the potential of large areas. One large new mining operation was begun on Bonanza Creek at the foot of Lovett Gulch as a result of drilling done early in 1982. Some trenching and bulk sampling programs were done. A few of those programs were carried out on tailings as little as one year old, in an attempt to determine the efficiency of new processing equipment in recovering very fine-grained gold not recovered during previous processing. No new mining operations resulted from programs testing the new equipment. It is notable that exploration, staking, and evaluation activities all increased during August when the gold price reached $400.00 U.S. per ounce. Some programs which had been curtailed earlier in the year were resumed.

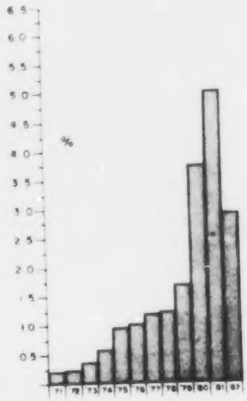
PLACER LEASES STAKED 1971 – 1982




YUKON PLACER GOLD PRODUCTION 1971 – 1982


PLACER CLAIMS STAKED 1971 – 1982

YUKON PLACER PRODUCTION / CANADIAN PRODUCTION x 100



Origin of the Clinton Creek Asbestos Deposit

by

Grant Abbott
Exploration and Geological Services Division
D.I.A.N.D.
Whitehorse, Yukon

INTRODUCTION

Asbestos in most Cordilleran deposits has been considered a product of fracturing, metasomatism and thermal metamorphism of ultramafic rocks by Mesozoic intrusions (Budinski 1969, Gabrielse 1960, 1963, Hewett 1978, and Htoon,1974). Such a history has been postulated for the exhausted asbestos deposit at Clinton Creek, 77 km northwest of Dawson City, Yukon. This report, based on a 5 day visit during July 1981, contains another interpretation of the mine geology. It is based on the premise that the ultramafic host rocks represent slices of oceanic crust thrust onto the North American craton during Mesozoic arc-continent collision (Tempelman-Kluit 1979). A critical fossil occurrence demonstrates that intensely deformed asbestos bearing serpentinite and other cataclastic rocks are tectonically interleaved with weakly deformed Triassic and older (?) shale and sandstone of the younger, southwestern part of the Cordilleran miogeocline. Brittle fracturing, hydration and asbestos formation likely occured during final emplacement of the ultramafic rocks onto the wet miogeoclinal strata.

Archer Cathro and Associates and Cassiar Asbestos Corp. kindly provided accomodation and access. Scott Murray gave the writer a thorough, informed tour. D.J. Tempelman-Kluit reviewed the manuscript and suggested worthwhile revisions.

REGIONAL SETTING

Rocks originally included with the Yukon Group underlie Clinton Creek and Dawson map area southwest of Tintina Trench. McConnell (1905) and Green (1972) recognized five subdivisions: Namely meta-sedimentary rocks of the Nasina Series, sheared granitic rocks of the Klondike Schist, unnamed ultramafic rocks, metavolcanic rocks and granitic gneiss. Tempelman-Kluit (1979) extrapolated his work in the Pelly Mountains and included these rocks in the Yukon Cataclastic Complex, except possibly the Nasina Series. He considers the Nasina Series the outboard part of the Cordilleran miogeocline. The Cataclastic Complex is a tectonic melange, containing slabs of oceanic crust (Anvil Allochthon), trench sediments (Nisutlin Allochthon) and exotic crustal fragments of igneous rocks possibly derived from the root of a volcanic arc (Simpson Allochthon). All were sheared and imbricated during subduction and/or arc-continent collision.

LOCAL GEOLOGY

Clinton Creek is within the unglaciated Yukon - Tanana upland and bedrock exposures are scarce. This report is therefore based mainly on observations in the abandoned Porcupine and Snowshoe open pits, from nearby exposures on Clinton and Wolverine Creeks and from road cuts in the same area. Most of these exposures are visible in Figure 1. Others occur intermittently for about 10 km along the mine access road and on Wolverine Creek. They are out of the picture to the bottom left and to the right respectively.

Near the mine, Green (1972) mapped serpentinite lenses and related ultramafic rocks within quartzite and graphitic quartzite of the Nasina Series. Htoon (1979, 1982) mapped ultramafic rocks and subdivided the Nasina Series into four units. He thought that some of these rocks resemble the Klondike Schist.

The writer saw two groups of rocks distinguished lithologically and by differences in intensity of deformation and grade of metamorphism. One group comprises sheared or schistose ultramafic, igneous and sedimentary (?) rocks. The other, includes comparatively undeformed and unmetamorphosed shale, and siltstone. Though generally unmetamorphosed these rocks locally include phyllite and phyllonite.

Sheared Assemblage

The sheared assemblage includes serpentinite, diorite, amphibolite and schist of uncertain origin. Except the serpentinite they display a prominent flaser or a pervasive foliation defined by alignment of metamorphic minerals (Figure 2). Foliation is poorly developed in some of the igneous rocks. Metamorphic grade is greenschist facies and primary textures were not observed.

Serpentinite forms lenses a few meters to 200 (?) meters thick. Aeromagnetic anomalies, vegetation anomalies (vegetation is commonly thin or absent over serpentinite) and limited outcrop data suggest that most lenses have long dimensions about 10 times their thickness. The largest serpentine hosts asbestos ore in the Snowshoe and Porcupine Pits. 'Fish scale' textures are characteristic but not present everywhere (Figure 3). This texture results from irregular, subparallel intersecting cleavage or shear planes. Commonly, parallel, gently dipping, discrete surfaces are intersected by splays of less well developed, S-shaped cleavage. The spacing of shear planes ranges from about 30 cm to less than 1 mm. In cross-section, this pattern looks like a conjugate joint set, but surfaces also splay and converge in the third dimension. Outcrops exhibiting fish-scale texture characteristically break into asymmetric, lozenge shaped fragments. Most chrysotile bearing rock of ore grade is massive and blocky. In a few places,

Yukon Exploration and Geology 1982, p. 18-25

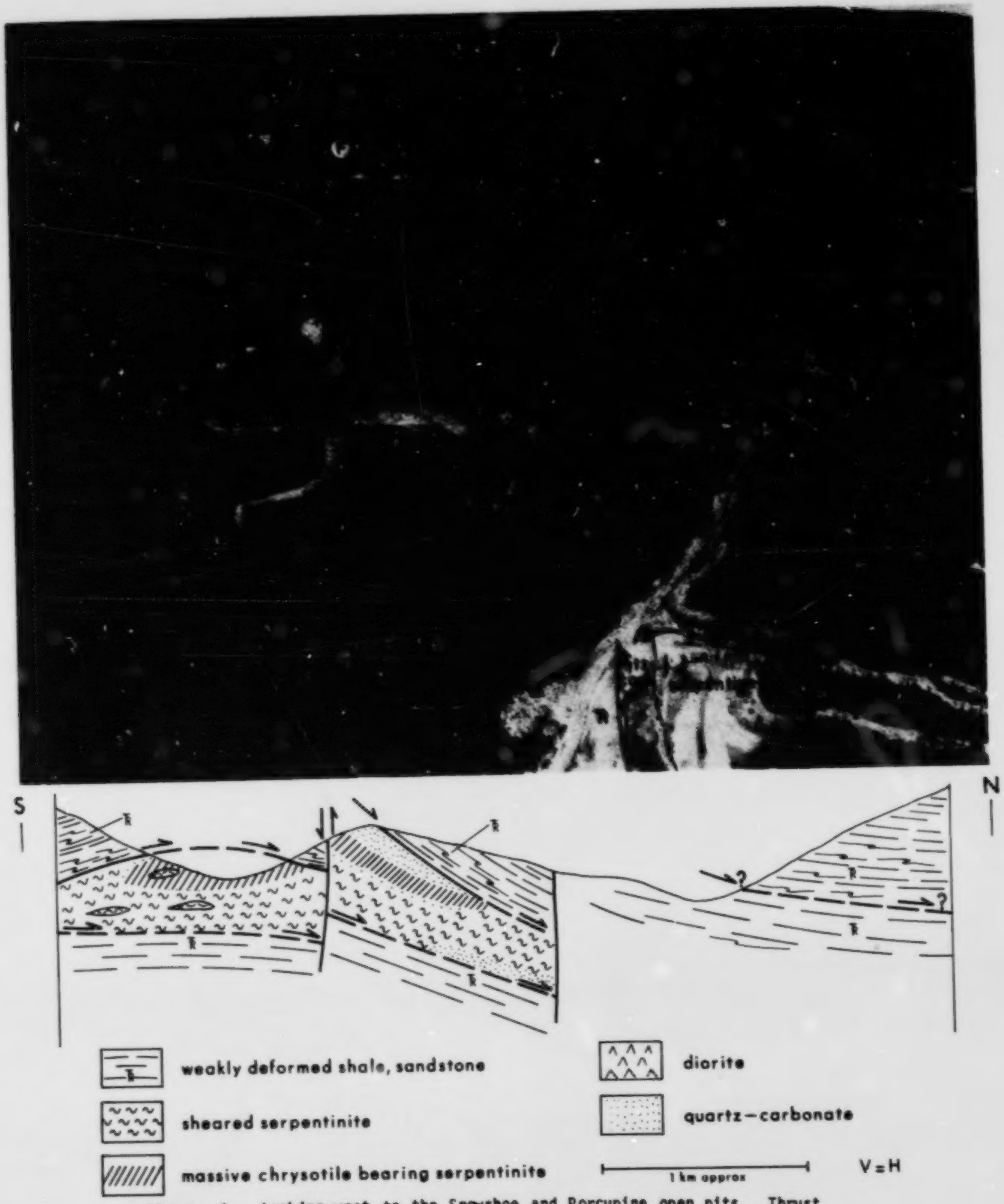

S
N
TR
TR
TR
TR
TR
?
?
weakly deformed shale, sandstone
sheared serpentinite
massive chrysotile bearing serpentinite
diorite
quartz–carbonate
1 km approx
V=H

Figure 1. Looking west to the Snowshoe and Porcupine open pits. Thrust faults bound the asbestos bearing serpentinite. The lower thrust is shown with open teeth and the upper thrust is shown with solid teeth. Normal faults cut the thrusts.

Figure 2. Meta igneous rocks such as these are exposed along the mine access road. They typically display a strong flaser fabric, defined by anastomosing mafic and leucocratic bands.

asbestos bearing veins also mimic fish scale texture, but most asbestos bearing fractures are oriented in different directions at high angles to one another. Massive serpentinite without chrysotile veins is also common.

Orange weathering, quartz-carbonate alteration forms discontinuous, sheets up to 30 m thick along the hangingwall and footwall of the ore bearing serpentinite. Quartz carbonate is also exposed with serpentinite along the mine haul road, but these exposures are poor and their relationship is unclear.

Figure 3. Serpentinite typically displays 'fish scale' structure defined by anastomosing cleavage or shear planes.

The quartz-carbonate is massive with coarse irregular shaped quartz blebs in orange carbonate. Htoon (1979) reports that the alteration includes quartz, chalcedony, opal, and magnesite with less ankerite, dolomite, chromite and picotite and rare mariposite, calcite and huntite. Pit exposures show that quartz carbonate replaces asbestos and lacks fractures like those hosting asbestos. Quartz carbonate therefore postdates the asbestos. It probably post dates most penetrative deformation, because if lacks the cleavage of the country rocks.

Sheared amphibolite and hornblende diorite occur as lozenge shaped lenses within the serpentinite and as separate bodies, about the same size as the ultramafic rocks. Penetrative fabrics in these rocks vary more than in others. Some rocks are fairly massive, others display a strong mineral aligment and still others are schistose with a strong flaser fabric defined by anastomosing compositional laminae.

Diorite lenses in serpentinite have massive black, fine grained alteration rinds up to 30 cm thick termed blackwall alteration by mine geologists. The rinds are not present everywhere and shears separate serpentinite from rinds and diorite. Diorite therefore, intrudes the ultramafic rocks, but predates shearing and deformation. Their timing relative to serpentinization is not clear.

Lustrous orange-brown weathering quartz muscovite schist and green weathering quartz-muscovite-chlorite schist, chlorite schist, and amphibolite comprise most exposures on the mine access road. They have a well developed foliation, ranging from a schistosity with aligned platy minerals to a flaser, in which compositional layering is defined by discrete, anastomosing foliation planes comprised of concentrations of mafic minerals.

The amphibolite is thought to be meta-igneous and the chlorite schist, metavolcanic. The quartz-muscovite-chlorite schist may also be igneous, but some is quartz rich and/or contains coarse, opalescent blue quartz grains suggestive of a sedimentary origin. These rocks are similar to the Klondike Schist. McConnell (1905) considered it to be a sheared granitic rock in its type area near Dawson, but Cockfield (1927) and Green (1972) presented evidence for a sedimentary origin. Tempelman-Kluit (pers. com. 1982) agrees with McConnell.

The ultimate origin of the highly sheared assemblage is uncertain. The serpentinite, amphibolite and chlorite schist are most like Tempelman-Kluit's (1979) Anvil Allochthon, and quartz-muscovite schist and quartz-muscovite-chlorite schist, if meta-igneous, like Simpson Allochthon and if meta-sedimentary, like Nisutlin Allochthon.

Contacts within the intensely sheared and with other rocks assemblages are tectonic. The rocks apparently lack stratigraphic order. Relative ages are unknown. Radiometric dates obtained by Htoon (1981) give Permian ages for amphibolite, greenstone and quartz-muscovite schist, (278 ± 10 Ma (K/Ar) for amphibolite, 245 ± Ma (K/Ar) for quartz-muscovite schist, and 255.8 ± 23 Ma (Rb/Sr) for greenstone and quartz muscovite schist.) Htoon considers that the dates indicate a metamorphic event and the strong metamorphic fabric of these rocks supports this conclusion.

Weakly Deformed Assemblage

Weakly deformed shale, siltstone and sandstone are exposed above, below and adjacent to the ore bearing serpentinite. The least deformed exposures are on Clinton Creek downstream from the lake outlet, on Wolverine Creek and in road cuts downstream from the junction of Clinton and Wolverine Creeks (Figure 4). These rocks are recessive, buff and dark grey weathering platy, calcareous, graphitic sandy limestone, sandstone and graphitic argillite or mudstone. Cross beds up to 5 cm across are characteristic of the sandstone. The greatest exposed thickness is about 30 m. Just downstream from the mouth of Wolverine Creek, a borrow pit exposes the sharp, moderately dipping contact between these rocks and overlying quartz carbonate alteraton and serpentinite. The shales are sheared and the contact is tectonic. The relationship of the other exposures to the serpentinite is not known.

Locally sheared sedimentary rocks are exposed above serpentinite in both open pits. In the Porcupine Pit, they form a gently dipping sequence with three equally thick members totalling about 100 m. The lowest member is black, sooty, graphitic siliceous shale: the middle is dark grey, thin, well bedded, graphitic, limy quartz arenite and black shale (Figure 5), and the upper member is with a varicoloured thin-bedded sequence of black slate, orangy brown weathering silty phyllite a few thin beds of pale green tuffaceous phyllite.

Phyllitic rocks like the upper member in the Porcupine Pit are exposed in road cuts and outcrops north of Clinton Creek and Hudgeon Lake (Figure 2). They are a thick sequence of light brown weathering, impure grey shale, siltstone and some micaceous sandstone. Underlying rocks are the weakly deformed buff weathering limey sandstones already described. In places the phyllites display two cleavages and appear to be more intensely deformed than the underlying rocks. This contrast may mean that the contact between the two groups is a thrust.

Along the lower reaches of Clinton Creek, cleaved and folded shale and siltstone and tuffaceous phyllite, belong to the weakly deformed assemblage. Some of the more highly cleaved green phyllites may belong to the sheared assemblage. Highly sheared rocks tectonically overlie the phyllites in some places and may underlie them in others.

A sample of sandy limestone from the middle quartz arenite member in the Porcupine Pit yielded a single conodont fragment. M. Orchard of the Geological Survey of Canada considers the conodont (G.S.C. Loc. No. C102345) middle or late Triassic (pers. com. 1983). Most of the weakly deformed assemblage resembles Triassic rocks in Selwyn basin. Micaceous sandstone like that north of Clinton Creek resembles transported synorogenic clastic rocks described by Tempelman-Kluit (1979) from five localities in central Yukon. He considers those rocks to be upper Triassic or Jurassic and to be westerly derived from Teslin Suture Zone during the early

Figure 4. Weakly deformed Triassic shale and calcareous sandstone is exposed along Clinton Creek between Wolverine Creek and Hudgeon Lake. Note the contrast between the planar bedding in this photograph and the metamorphic fabric shown in Figure 2.

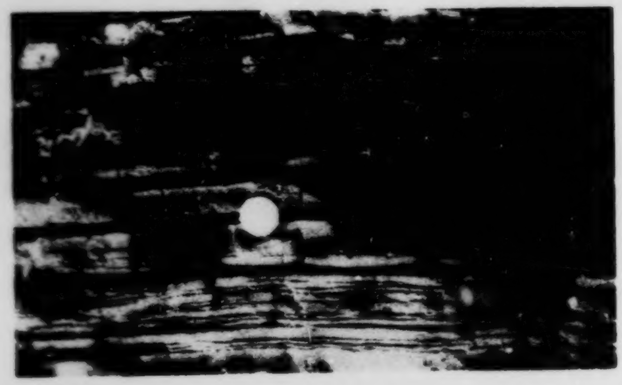


Figure 5. Weakly deformed calcareous sandstone exposed in the Porcupine Pit above serpentinite. These rocks have yielded Triassic conodonts and are similar to those shown in Figure 4. The coin is 3 cm across.

stages of arc-continent collision. Unlike those at Clinton Creek, the rocks described by him contain coarse mylonite fragments or other rock types from an active orogen. At Clinton Creek, the micas and the immature aspect of strata are evidence of such a source.

STRUCTURE

Two penetrative fabrics with related folds and thrust faults and several steep faults have been recognized. The penetrative fabrics and thrust faults are late Paleozoic - Mesozoic and probably related to arc-continent collision. The steep faults cut the penetrative fabrics and are younger than other structures.

Steep Faults

Vertical and northeast or west trending faults are best displayed in both open pits (Figure 1). The fault with the largest known displacement truncates the northwest side of the orebody. There are no markers or serpentinite on the northwest side of the fault and the sense of movement is uncertain, but the amount of movement must exceed 100 m, because that is the thickness of the exposed serpentinite. The fault is marked by a disturbed zone several meters wide.

A second fault, similar to the first, separates ore in one pit from that in the other. Displacement of the serpentinite-shale contact is between 50 and 100 m with the southeast side down.

A few other faults are exposed on the south wall of the Porcupine Pit. They parallel the larger faults, displace markers 1 to 3 meters, differ in movement sense and are knife sharp (Figure 6).

In other areas with less exposure, steep faults, related to those in the open pits are suggested by the juxtaposition of different rock types.

Penetrative Fabrics

Fossil and radiometric ages and contrasts in intensity of deformation and grade of metamorphism demand that the two groups of rocks at Clinton Creek be tectonically juxtaposed after development of a cataclastic fabric in one group and that there be more deformation this group than the other. Htoon (1979) showed that two foliations, one deforming the other, are present in 'schistose rocks', but he did not recognize that schistosity is confined to one group. He described the second cleavage as a Gleitbrett. The 'fish scale' texture within serpentinite may reflect two or more phases of deformation.

In the weakly deformed assemblage a single cleavage is generally parallel to or subparallel to bedding and dips at a low angle. The few folds are recumbent, isoclinal, less than 2 m across and have westerly trending axes. Intensity of cleavage varies from place to place. Exposures beneath serpentinite along Clinton Creek near the mine site appear almost undeformed. In contrast those above serpentinite in the open pits have a stronger cleavage. In places they are phyllonites with local breccia zones roughly parallel to bedding (Figures 6 and 7). Brown weathering micaceous phyllite north of Hudgeon Lake and Clinton Creek unlike most other phyllite, exhibits two cleavages.

Figure 6. Gently dipping shear zones that roughly parallel the shale-serpentinite contact and bedding are well exposed in the Porcupine Pit. This photo shows a sandstone boudin about 2 m thick. It is enclosed by sheared shale and cut by a late normal fault.

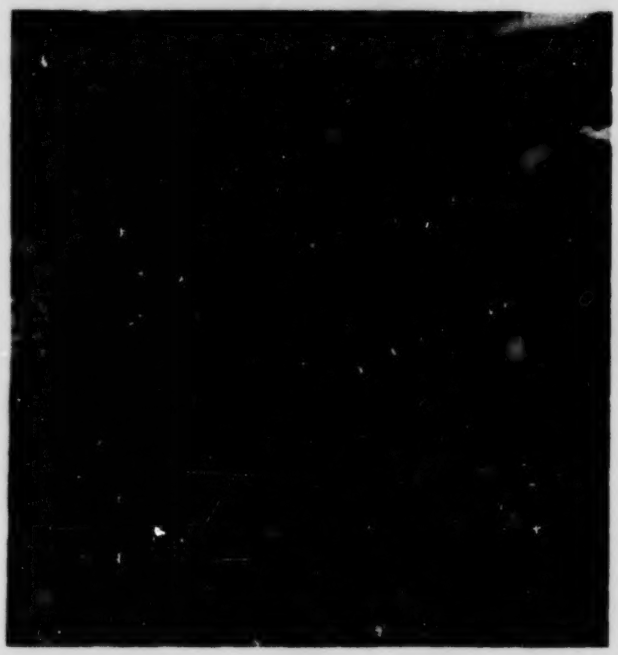


Figure 7. Close-up of sheared and brecciated shale and sandstone from Figure 6. Coin is 3 cm across.

Schistosity and cleavage have similar orientations where both are exposed. Orientation of bedding and penetrative fabrics varies from place to place. The strike is generally west to southwest and the dips range from 0^0 to 45^0 north and south. These variations may represent a late phase of broad open folding (Htoon 1979).

Thrust Faults

Thrust faults must separate the cataclastic rocks from the less deformed sedimentary rocks. Only the two that bound the ore bearing serpentinite are obvious (Figure 1). The lower thrust surface is in a borrow pit just east of the mouth of Wolverine Creek where quartz carbonate alteration lies directly on the Triassic shale. The contact dips north at about 40^0 and cannot be traced far. The upper thrust is in both open pits. From a distance it appears to be sharp and separates quartz-carbonate alteration or serpentinite from Triassic shale. The surface roughly parallels bedding in the shale. It is gently curved and the serpentinite appears through a window beneath the shale. This 'window' may reflect late folding of the thrust, or it may reflect the shape of the serpentinite. The second alternative is favoured because the ultramafic rocks are discontinuous lenses.

Other thrusts are likely but have not been recognized. Contrasts in intensity of deformation such as that seen north of the mine may indicate such structures. Contacts between different rock types within the highly sheared assemblage are tectonic but most are likely old and related to shearing that predates obduction.

Elsewhere in Yukon, along Teslin Suture Zone, the tectonic history is simpler than at Clinton Creek. Tempelman-Kluit (1980) has shown that the allochthonous Yukon Cataclastic Complex, in the Pelly Mountains, is a discrete package, separated by thrust faults from underlying autochthonous, miogeoclinal strata. Three assemblages of the Complex are thrust bounded and stacked in the same order. Nowhere, are the cataclastic rocks interleaved with, or overthrust by, less deformed miogeoclinal rocks. The three cataclastic assemblages are presumed to have been tectonically assembled before being thrust on to the Ancient North American margin.

ORIGIN OF ASBESTOS

Asbestos at Clinton Creek could be related to granitic intrusions, late normal faulting or shearing and thrusting with the third most likely. Htoon (1979) favoured a mechanism related to Cretaceous granitic intrusions, but he also stated that the nearest intrusion, a small one, is 5 km west of the mine. The nearest intrusion mapped by Green (1972) is 16 km away. Metamorphic aureoles surrounding most plutons in Yukon are less than a kilometer wide and there is no thermal metamorphic or other evidence near the ore deposit to indicate a buried intrusion. Fracturing and asbestos veining like that in the Clinton orebody are unlikely to result from an unexposed pluton for which there is no evidence. Diorite and gabbro lenses within the ore body predate shearing and asbestos formation and cannot be appealed to as a late hydrothermal source.

Normal faults are also unlikely to be related to asbestos formation because they have consistent attitudes, are sharp, and are widely spaced; unlike the irregularly oriented, closely spaced asbestos bearing fractures. Although the faults are likely younger than asbestos, cross-cutting relationships were not seen.

The asbestos bearing fracture system differs from the shearing and thrust faulting, but the two are thought to be genetically linked. Htoon (1979) showed that asbestos bearing fractures have several orientations in any exposure (Figure 8) and are randomly oriented when the whole orebody is considered. In contrast, bedding, cleavage, thrusts

Figure 8. Asbestos bearing fractures are typically irregularly oriented. These are from the Snowshoe Pit.

Figure 9. In places, massive serpentinite is enclosed by more highly sheared rocks. The orebody may represent a similar but larger lens.

and shears near the orebody have consistent orientations. This contrast and the fact that fractures of the kind hosting asbestos are confined to serpentinite may reflect the greater competence and massive blocky nature of the serpentinite in comparison to enclosing shales. If so, serpentinite probably contains asbestos elsewhere only if it is a lens in less competent rocks.

'Fish scale' texture is only locally developed within the orebody. Either that part of the orebody was never deformed or was reserpentinized after development of the 'fish scales'. The first possibility is suggested by the nearby occurrence, on a small scale, of massive lenses enclosed by more highly sheared rocks (Fig. 9). No matter which possibility is correct, a prerequisite for ore formation is massive serpentinite in which brittle fracturing is possible.

The time of asbestos formation is limited as follows. Most asbestos veins are undeformed and younger than cleavage in shales and the 'fish scales' in serpentinite. The random orientation of fractures suggests that they formed under low confining pressures. The geometry and contact relations of quartz carbonate alteration are evidence that asbestos predates imbrication of serpentinite with enclosing shale. The alteration forms selvages on the margin of the serpentinite along thrust contacts. Adjacent shales exhibit no veining or other alteraton that are expected if alteration followed thrusting. The

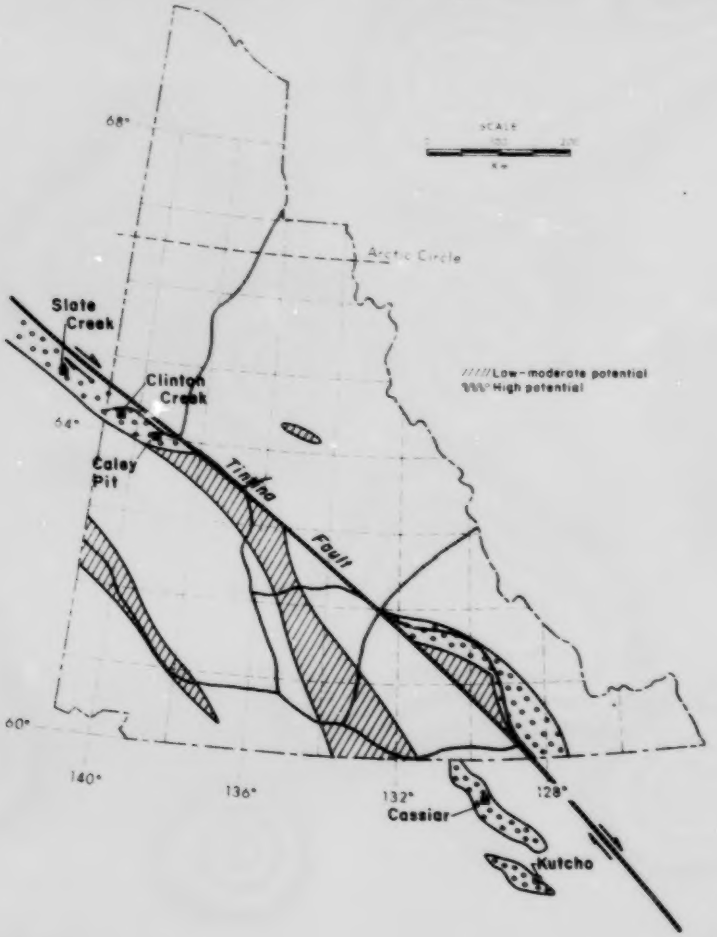


Figure 10. Areas with high potential for discovery of large asbestos deposits are thought to be underlain by ultramafic rocks that are near the leading edge of thrust surfaces along which they were emplaced. Large deposits occur in these areas. Other areas with large to moderate potential are those underlain by ultramafic rocks in different tectonic settings.

alteration replaces asbestos veins and is younger.

Granitic rocks have been considered the source of water and heat to form asbestos. Htoon, (1979, p. 145) cited evidence that asbestos can form below 100°C. A granite heat source is therefore unneccessary because such temperatures can be formed at shallow depths, under normal geothermal gradients. Water to form serpentine and chrysotile may derive from enclosing sedimentary rocks.

EXPLORATION POTENTIAL

If asbestos formed at low temperatures and shallow depths during the late stages of obduction and imbrication of serpentinite, areas where more deposits are likely to be found are in Teslin Suture Zone and the leading edge of thrust slices of ultramafic rocks (Fig. 10). Three other large asbestos deposits in western Canada and Alaska are in this zone. They are, the Slate Creek deposit about 40 km northwest of Clinton Creek in Alaska, the Caley Pit near Clinton Creek and the Cassiar Creek deposit in Northern British Columbia. An exception may be the Kutcho deposit located in Nothern British Columbia. Near known deposits, recognition of the fact that serpentinite is in fault bounded lenses or sheets and that there is a genetic relationship between these faults and ore should result in new drill targets.

References

BUDINSKI, D.R. 1969, September. Geology of the Clinton Orebody; Western Miner , p. 30-32.

COCKFIELD, W.E. 1921. Sixtymile and Ladue Rivers area, Yukon; Geol. Surv. Can., Memoir 123.

GABRIELSE, H. 1960. The Genesis of Chrysotile Asbestos in the Cassiar Asbestos Deposit, Northern British Columbia: Ec. Geol., Vol. 55, p. 327-338.

GABRIELSE, H. 1963. McDame Map-Area, Cassiar District, B.C.: Geol. Surv. Can., Memoir 319, 139 p.

GREEN, L.H. 1972. Geology of Nash Creek, Larson Creek and Dawson map areas, Yukon Territory (106 D, 116 A, 116 B and 116 C (E 1/2), Operation Ogilvie; Geol. Surv. Can., Memoir 364, 157 p.

HEWETT, F.G. 1978, April. The Cassiar Story: Geology: C.I.M. Bull. p. 56-63.

HTOON, M. 1979. Geology of the Clinton Creek asbestos deposit, Yukon Territory, unpublished M.Sc. thesis, University of British Columbia , 194 pp.

HTOON, M. 1981. Isotopic Age Determinations of some metamorphic and igneous rocks from Clinton Creek Area, Yukon; Yukon Geology and Exploration, Geology Section., D.I.A.N.D., Whitehorse, p. 65-67.

McCONNELL, R.G. 1905. Report on the Klondike gold fields; Geol. Surv. Can., Ann. Rept. (New Series), Vol. XIV, 1901, Pt. B, 71 pp.; also as separate publ. No. 884; reprinted in Bostock, 1957, p. 64-113.

TEMPELMAN-KLUIT, D.J. 1979a. Five occurrences of transported synorogenic clastic rocks in Yukon Territory; Geol. Surv. Can., Paper 79-1A, p. 1-12.

TEMPELMAN-KLUIT, D.J. 1979b. Transported Cataclasite, Ophiolite and Granodiorite in Yukon: Evidence of Arc-Continent Collision; Geol. Surv. Can., Paper 79-14, 27 pp.

Geology of the EPD Stanniferous Breccia Deposit, McQuesten Area, 115 P, Yukon

by Diane S. Emond

Ottawa Carleton Centre for Geoscience Studies

Introduction

The EPD property is located in central Yukon, (Fig. 1) 30 km northwest of Mayo, just south of the McQuesten River. Tin, zinc, and silver anomalies found in stream sediment samples of Oliver Creek in 1977 led to staking of the EPD claims in 1978. Over 300 m of diamond drilling between 1979 and 1981 (area on Fig. 1) explored targets outlined by soil sampling on the slopes above Oliver Creek.

This paper is based on detailed logging of drill core in the summer of 1982 supplemented by petrography of selected samples, and geochemistry values for sections of the drill core provided by Billiton Canada Ltd. Core logging was done using the methods of the 'Geolog' system (Blanchet and Godwin, 1972). This preliminary report outlines the geology, mineralogy, and petrogenesis of the EPD stanniferous breccia. Further laboratory studies will be incorporated in a M.Sc. thesis at Carleton University, Ottawa, Ontario.

GENERAL GEOLOGY

Metamorphic Rocks

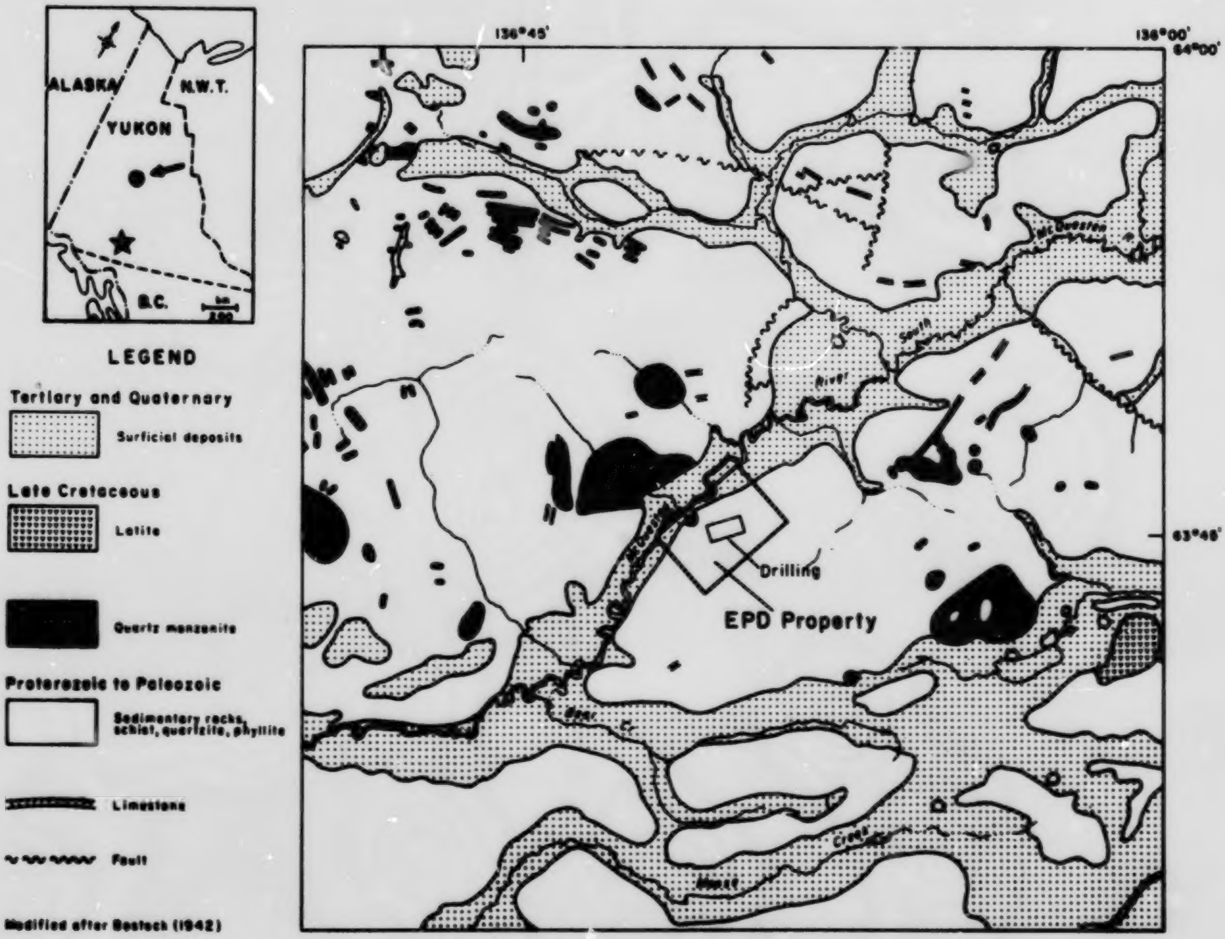

ALASKA
N.W.T.
YUKON
B.C.
LEGEND
Tertiary and Quaternary
Surficial deposits
Late Cretaceous
Latite
Quartz monzonite
Proterozoic to Paleozoic
Sedimentary rocks, schist, quartzite, phyllite
Limestone
Fault
Modified after Bostock (1942)
136°45'
136°00'
64°00'
63°45'
McQuesten
South
River
Drilling
EPD Property
Creek

Figure 1. Geology and locations of the McQuesten River area (after Bostock, 1964) and location of EPD property. Oliver Creek flows north through the central part of the property.

Yukon Exploration and Geology 1982, p. 26-33

The region is underlain by quartzite and schists which are interpreted by Tempelman-Kluit (1981) as Upper Precambrian to Lower Cambrian Grit Unit (Fig. 1 - white unit). The quartzite, quartz-chlorite schist, chlorite schist and quartz-mica schist contain minor amounts of intercalated marble, calc-silicate, and amphibole (+ pyrrhotite) schist. Cataclastic deformation and complicated folding resulting in transposition foliation and mylonitic textures inhibit correlation between drill holes. Abundant marker horizons of marble, calc-silicate and amphibole schist and closely spaced drill holes in the eastern part of the area enable some lithologic units to be matched (Fig. 2). The prominent foliation dips shallowly to moderately to the south.

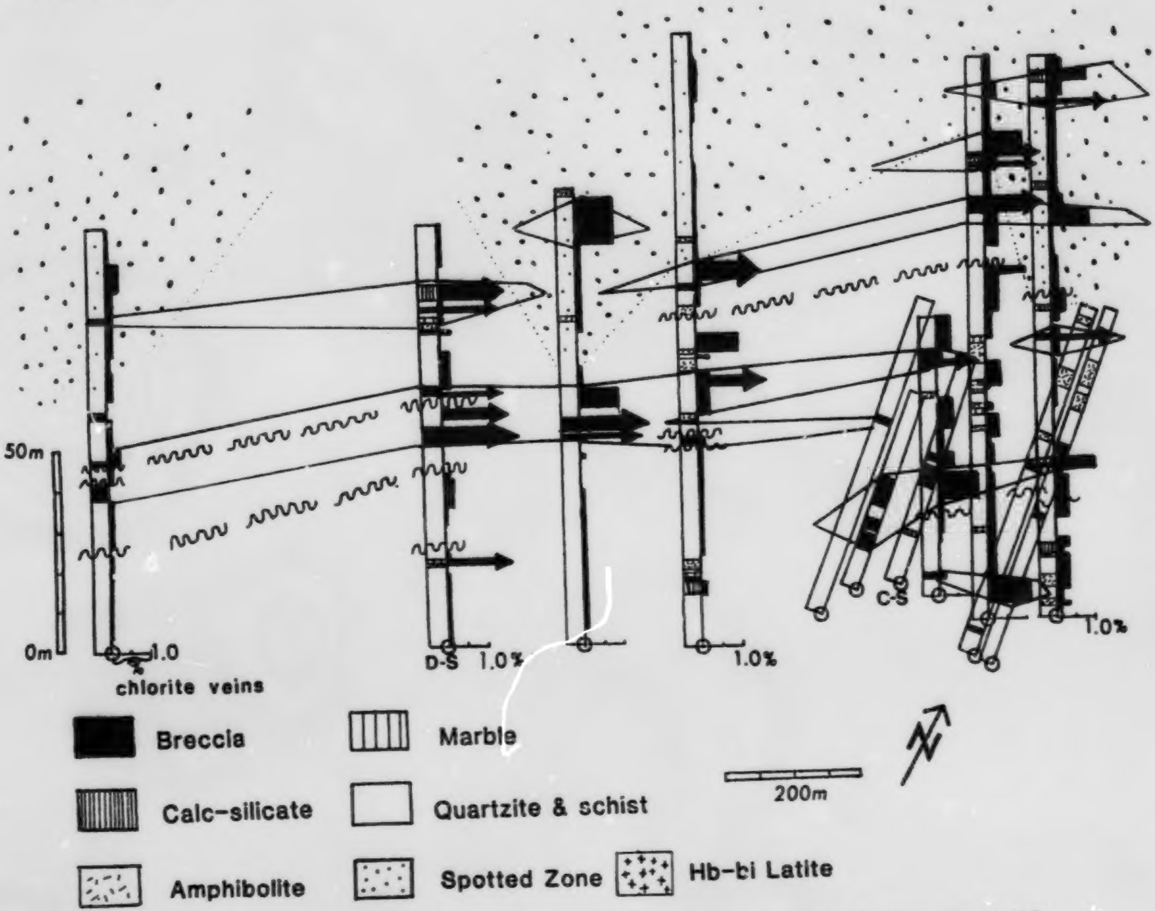


Figure 2. Geology and volume % chlorite veins per rock unit in the EPD drill area - Plan View. The outlined bodies are approximate boundaries of alteration/breccia zones.

Below 70 m depth, chlorite and biotite schists contain scattered andalusite porphyroblasts which are partially altered to sericite + biotite. This spotted rock outcrops north of the area of drilling. Drilling has outlined the porphyroblastic zone seen in plan view in Figure 2. Surrounding the nearby Scheelite Dome intrusion, Kuran (1980) has described a similar porphyroblastic zone.

Igneous Rocks

Numerous, small, high level quartz-monzonite plutons intrude the McQuesten area. They range from 83 to 108 Ma (K/Ar, Sinclair, et al., 1981a). Porphyritic quartz-monzonite outcrops in the northwestern corner of the property and may be connected to the Boulder Creek stock across the McQuesten River. It locally contains fractures filled with fluorite and tourmaline. Several of the intrusions in the McQuesten River area have associated mineralization (i.e. tungsten at Scheelite Dome, tungsten and tin at Dublin Gulch).

Hypabyssal sills and dykes and probable volcanic equivalents are present. A biotite-quartz porphyry dyke on nearby Mount Haldane has cassiterite-greisen mineralization at its contact with quartzite. The dyke has been dated at 89.0 + 2.6 Ma (Biotite, K-Ar - Stevens et al, 1982). Near Minto Lake, 20 km east of EPD, columnar jointed hornblende-biotite latite is interpreted as an extrusive rock and has been dated by the G.S.C. at 85.3 +2.1 Ma (Whole rock K-Ar - Personal Communication, W.D. Sinclair - 1982).

Breccias.

The breccia bodies are vein-like in shape and can be traced between most drill holes (Fig. 2). The veins strike generally east and dip 70° or more south (Fig. 3)., pinching and swelling irregularly along strike. They are most common in the eastern part of the drill area, the main type being a rock flour breccia of 70-90% angular quartzite fragments in a finely comminuted matrix of similar composition (Fig. 4). Sub-parallel gouge zones commonly cut the breccias.

A second breccia type cuts both the earlier rock flour breccia and country rock. It consists of 50-80% rock fragments (mainly quartzite) in a matrix of various compositions that are used to distinguish the breccia phases. Locally, the rock flour matrix has been altered to another mineral (ie. chlorite, tourmaline). Petrographic examination indicates the following sequence of crystallization in the matrix: from first to last, quartz, tourmaline, biotite, muscovite, chlorite, and calcite-fluorite (Fig. 5). The matrix is commonly monomineralic, but in some places several phases occur together, such as tourmaline-chlorites, and tourmaline-muscovite. Figure 6 indicates that 6 main stages of mineral deposition took place.

The final stage is depicted mainly by limonite, but also includes some manganese oxide and minor malachite/azurite stain. These minerals are found in fractures in both the country rock and breccia zones.

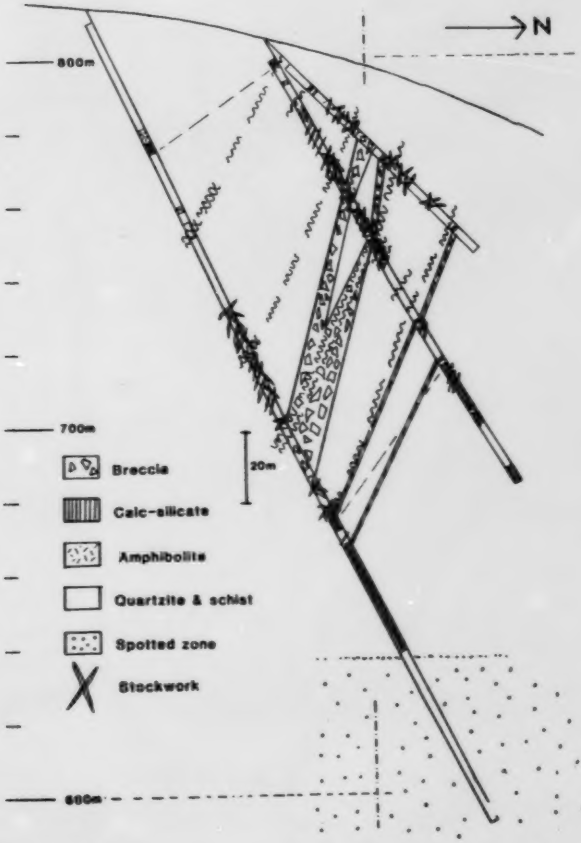


Figure 3. N-S cross section at DDH's 13-7-8 (denoted by "C-S" on Figure 3).

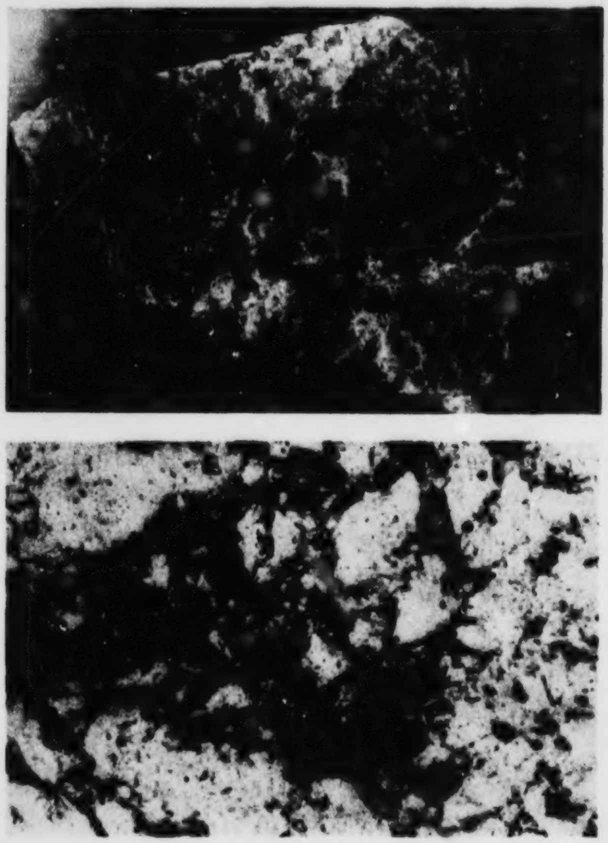
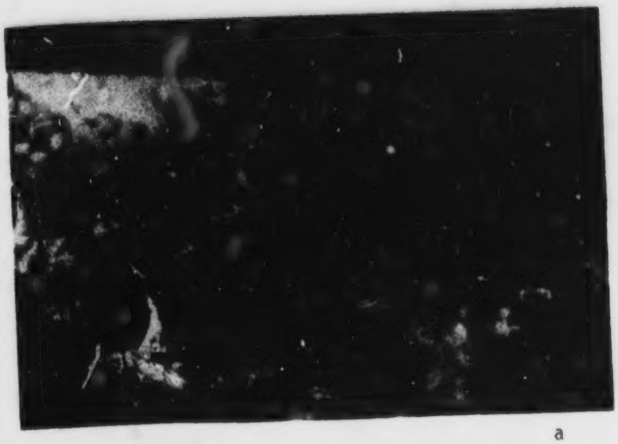


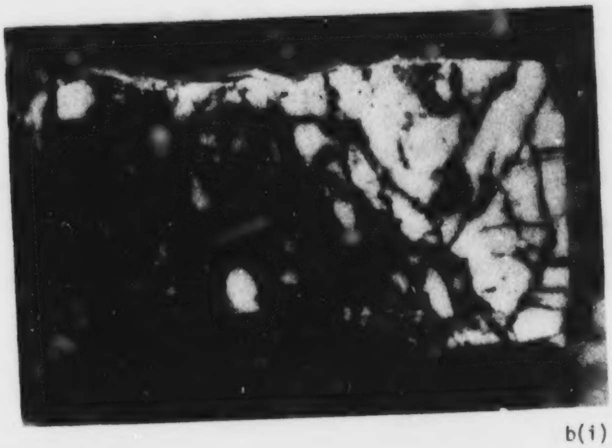
Figure 4. Rock Flour Breccia. Quartzite fragments with ground-up quartz matrix. a) rock sample. Field of view - 7.3 cm. b) thin section. Field of view - 0.55 cm.

Tin Mineralization

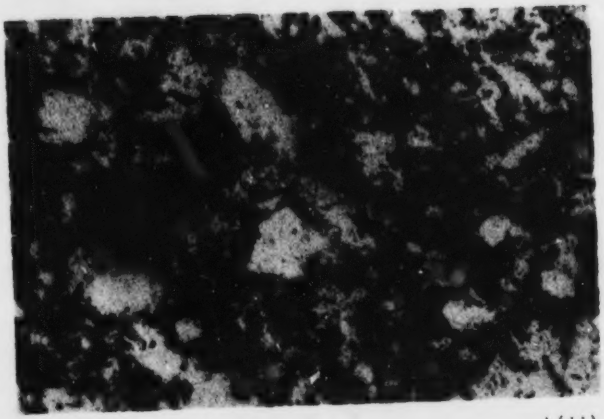
Tin mineralization appears to be mainly associated with chlorite vein and breccia zones. Cassiterite, the only tin mineral present, occurs both as fragments of crystal aggregates (monomineralic vein material) in a chlorite matrix, and as small crystals disseminated in the chlorite matrix of some breccias (Fig. 7). Cassiterite also occurs locally in the fractures of the rock flour breccia, and in



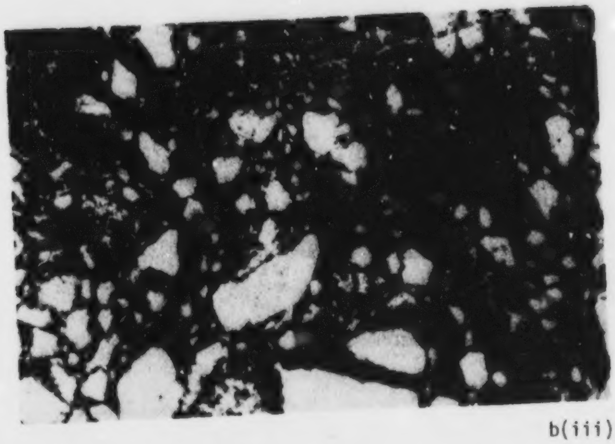
a



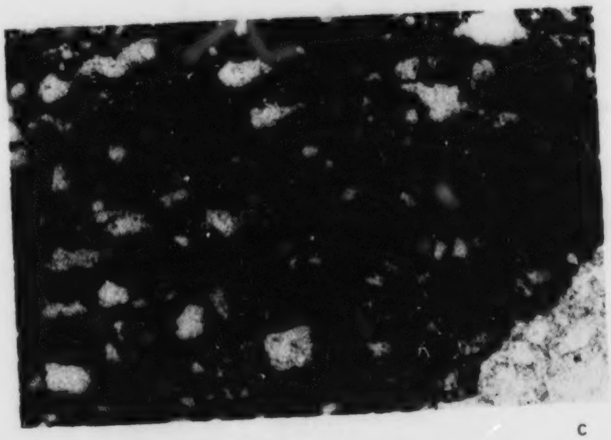
b(i)



b(ii)

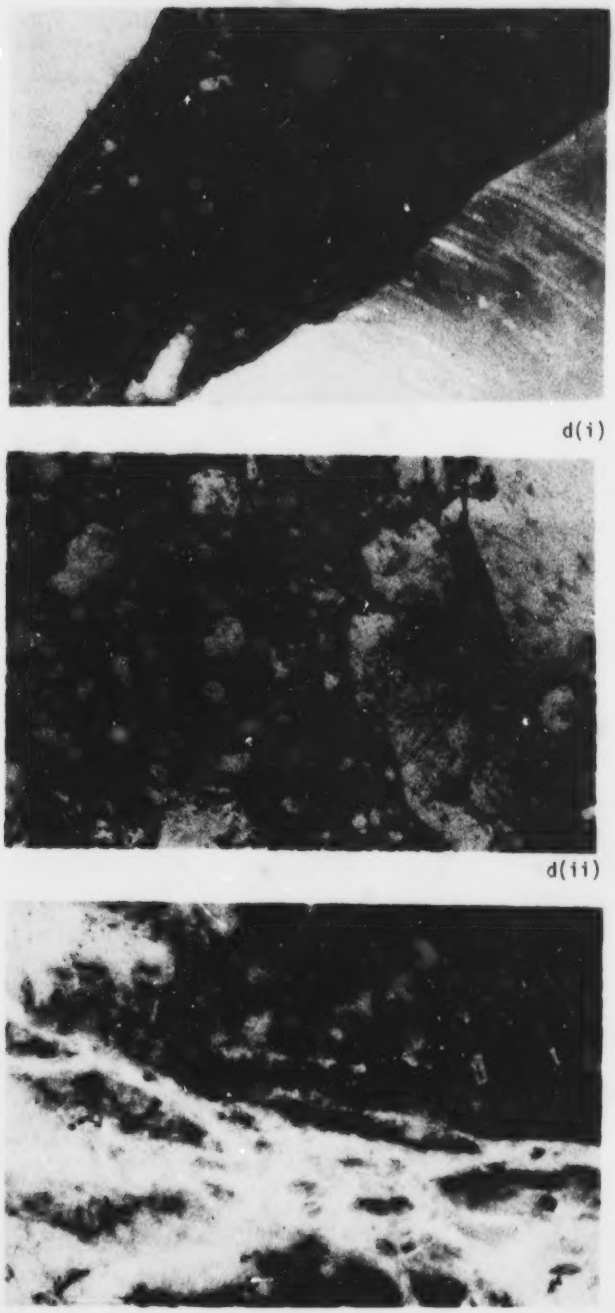


b(iii)



c

Figure 5. Hydrothermal Breccias.
a) Quartz breccia. Field of view - 7.5 cm.
b) Tourmaline breccia:
  i) rock sample. Field of view - 7.5 cm.
  ii) thin section - note tiny tourmaline crystals in matrix. Field of view - 0.55 cm.
  iii) thin section - note cross-cutting tourmaline vein. Field of view - 0.55 cm.
c) Cassiterite breccia clast in chlorite breccia - thin section, the clast has a dark cassiterite matrix with quartz and cassiterite fragments. Field of view - 0.09 cm.



d(i)

d(ii)

e

Figure 5 (continued).

d) Chlorite breccia:
  i) rock sample. Field of view - 7 cm.
  ii) thin section. Field of view - 0.55 cm.
e) Calcite fluorite stockwork cutting quartz breccia. Field of view - 7 cm.

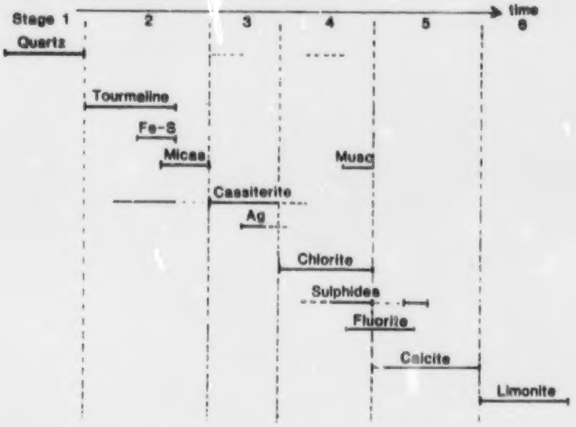


Figure 6. Paragenesis diagram for alteration minerals at EPD.

some tourmaline breccias. In addition, sphalerite and chalcopyrite are in the matrix of some chlorite breccias.

The tin mineralization is erratic in concentration. It is anomalously high only locally within the breccias and is irregularly dispersed therein. Anomalous tin concentrations at EPD are in the order of approximately 0.5 to 1.5% Sn over several meters width of breccia. Tin and silver are also anomalous usually over the same general area (breccia zones), but not coincident. These metals are in the range of 17 to 120 g/t Ag and 0.2 to 2.0% Zn over several meters width.

Alteration

During drill core logging, estimates were made of the amount of vein material in each rock unit. The proportion of the rocks occupied by vein chlorite (% per rock unit) is plotted in figure 2. This graph along with others which were made for quartz and tourmaline show that the amount of alteration generally increases towards the breccia zones. As breccia zones are approached, the amount of stockwork generally increases as does the amount of fracturing of the country rock (Fig. 3). From Figure 2, six east-striking parallel zones of alteration can be traced from hole to hole, following fault and breccia zones. Similar to the breccia zones, the zones of alteration pinch and swell. In the eastern part of the area, (the Discovery Zone), several alteration zones are depicted, but in the western part most of these zones do not continue. In some cases, the marble, calc-silicate, and amphibole schist also contain a greater amount of alteration than the surrounding quartzite.

Drill hole 16 (the second furthest west), shown in detail on Figure 8, is an example of variation in the abundance of chlorite, tourmaline, quartz and calcite veining, tin and silver. Two styles of quartz veins were distinguished during the core logging-concordant and discordant. The concordant veins were probably secreted out along foliation planes during regional metamorphism and are metamorphogenic. Discordant veins were probably formed by later

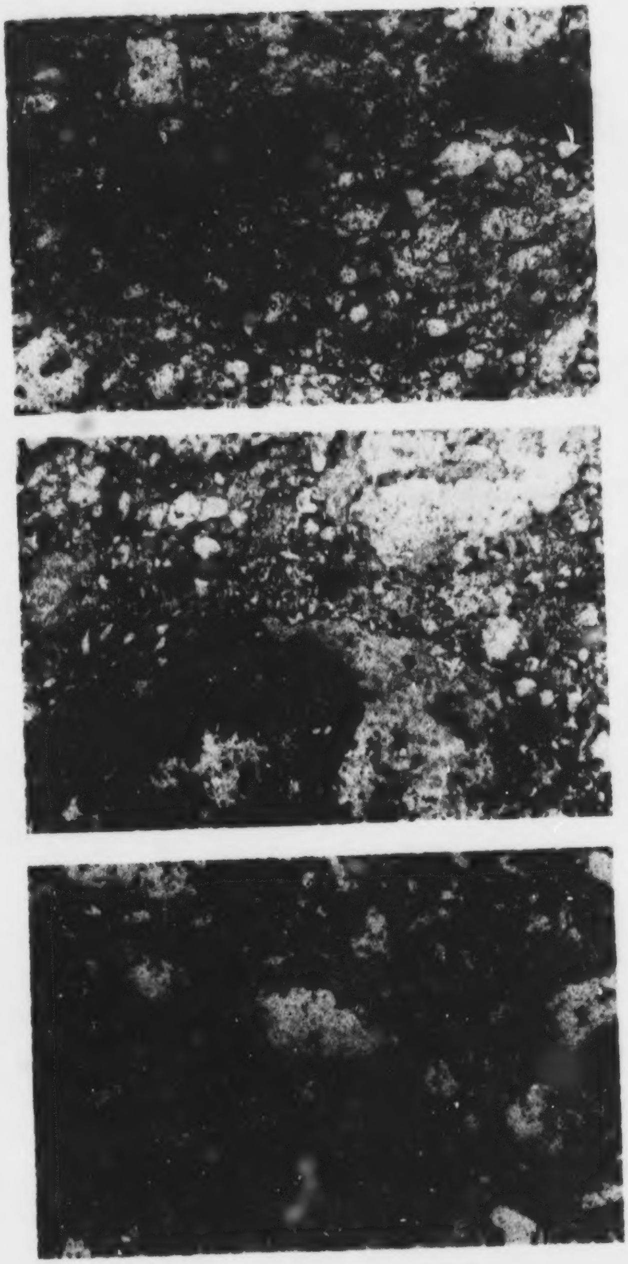


Figure 7. Cassiterite in chlorite breccia.

a) Fragments of monomineralic cassiterite crystal aggregates. Field of view - 0.55 cm.

b) Fragments of cassiterite mineral aggregates in a chlorite clast within a chlorite breccia. Field of view - 0.55 cm.

c) Disseminated fine grained cassiterite in chlorite matrix. Field of view - 0.55 cm.

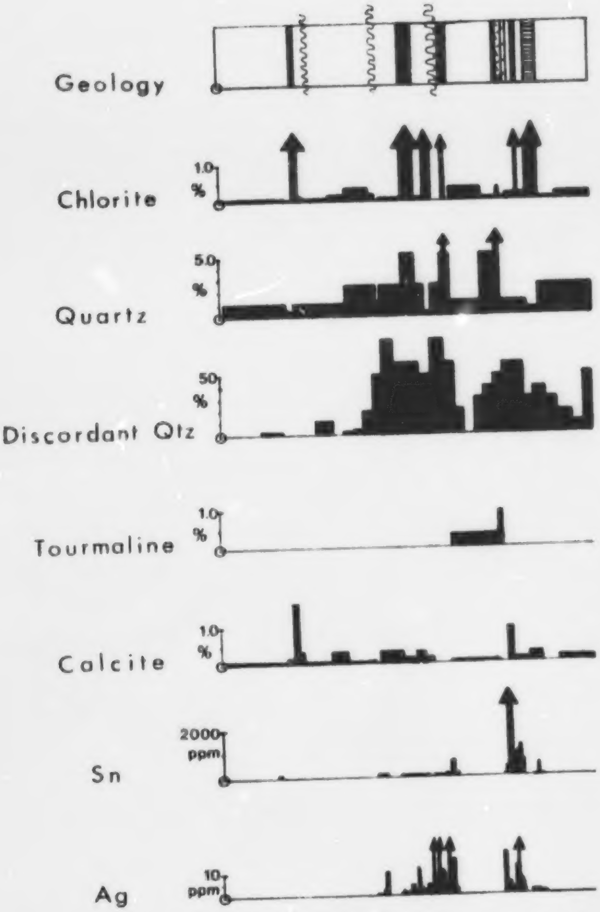


Figure 8. Geology and alteration in DDH 16. Geology legend is the same as in Figure 3. Alteration minerals are in volume percent veins. This drill hole is marked on Figure 3 as "D-S".

hydrothermal activity which deposited quartz in fractures that cross-cut the foliation. Thus, the measure of % discordant quartz, which is an estimate of the volume of discordant quartz veins/volume of total quartz veins, may be a measure of the amount of hydrothermal quartz. The variation in this percentage is also shown in Figure 8.

All of these alteration parameters are similar in that they increase in abundance as breccia (or fracture) zones are approached. As the amount of total vein quartz increases from the "background" values of approximately 1%, so does the percentage of discordant quartz veins. There are two main anomalies - one in the central part of the hole covering two breccia zones and another deeper in the hole covering another breccia body. Chlorite veining is also anomalous in the breccia zones, as well as in the calc-silicate and limestone units. Calcite veining is most abundant in the limestone and calc-silicate. Tourmaline veining, although of minor abundance in this drill hole, is present in one of the deeper breccia zones. Tin and silver vary somewhat similarly, however, their patterns are not exactly the same. The tin values are not only high in the breccia zones (up to 1.0%), but also in the amphibolite and calc-silicate units. Silver is high in fault gouge zones, breccias and in the amphibolite adjacent to the breccia (up to 30 ppm). Zinc, although not shown on this plot, commonly closely follows tin distribution, and is present in quantities of over 2.0% locally. In these patterns, irregularity of the mineralization is noted. Some breccias are mineralized and some are not, and when mineralized, metal values are not constant throughout the unit.

Conclusion

At the EPD property, tin mineralization occurs mainly in steep south-dipping fault breccia zones cutting the quartzite. These were further brecciated and altered by magmatic and hydrothermal solutions. Cassiterite is also present in some skarn rocks which are metasomatized lenses of marble and amphibole (+ pyrrhotite) schist. Quartz, chlorite, tourmaline, micas, calcite and fluorite occur in veins which increase in abundance toward the breccia zones. Skarn and limestone are more altered than surrounding quartzite and tin, silver, and zinc concentrations are irregularly dispersed through the breccia and some skarn units.

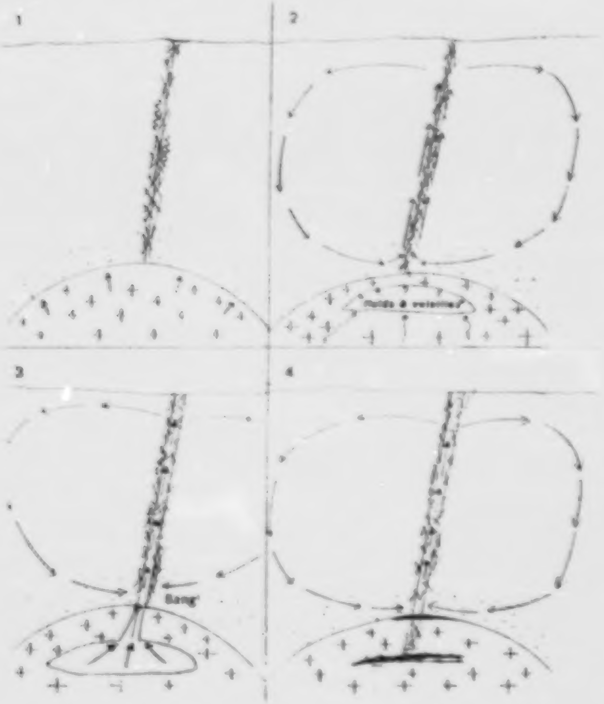


Figure 9. Model of formation of EPD. Four stages are proposed:

1) Emplacement of the quartz-monzonite intrusion and fracturing of the country rock;
2) Separation of fluids and volatiles within the intrusion and convection of groundwater within the country rock;
3) Hydraulic fracturing of the intrusion's carapace and movement of the magmatic fluid through fractures in the country rocks;
4) Convection and cooling of the country rock-retrograde alteration.

Figure 9 shows a model for the formation of the deposit. Emplacement of the quartz-monzonite intrusion caused fault and fracture zones which localized the rock flour breccia. Heat from the intrusion was responsible for convection of groundwater through fractures in the country rock. During this period, groundwater solutions were acidic and the first stage of alteration took place with the deposition of quartz (Fig. 6).

Fluids and volatiles in the magma collected in the upper part of the intrusion. Once the fluid pressure within the intrusion exceeded the lithostatic pressure, the magmatic solutions hydraulically fractured the carapace of the intrusion and moved into the country rock. THe great increase in volume occupied by the fluid, accompanied by a rapid drop in temperature of the fluids forced the precipitation of metals contained in solution. At EPD,this appears to have occurred enough times to have formed several different types of breccia.

Solutions which altered the rocks during this stage were acidic, high temperature, and rich in volatiles and metals (B,F,Sn,Ag,Zn,Cu). They were transported mainly along the large fractures into the country rock and favourable horizons were altered. As the solutions moved through the country rocks, they hydrolytically attacked minerals, and dissolved some metals, precipitating them further away from the intrusion under more neutral conditions.

Eventually the convection system became sealed off from the intrusion, and solutions became increasingly more alkaline and cooler because of country rock - solution interaction. These are favourable conditions for calcite (±fluorite) precipitation and retrograde alteration. Supergene alteration forming limonite, manganese oxide, and malachite-azurite stains took place in the latest stage of alteration following the same permeable fracture zones.

Acknowledgements

Much appreciation goes to Jim Morin, Chief Geologist, Whitehorse who initiated this project, gave helpful guidance in the field, and encouraged the writer. Exploration and Geological Services Division, Department of Indian Affairs and Northern Development, financed this work. Thanks to Daniel Rota of Billiton Canada Ltd. who obtained company permission and additional financial support for this project to be carried out. He also provided available information on the EPD property. Darlene Roberts, Kathryn Salmon and Greg Lynch gave able assistance and encouragement in logging of the drill core and Colin Godwin instructed the author in the use of 'Geolog'. Charlie Roots critically reviewed this report.

REFERENCES

BLANCHET, P.H. AND GODWIN, C.I. 1972. Geolog system for computer and manual analysis of geologic data from porphyry and other deposits; *Econ. Geol.*, Vol. 67, pp. 796-813.

BOSTOCK, H.S. 1964. "Geology, McQuesten River, Yukon Territory," *Geol. Surv. Can.*, Map 1143A.

KURAN, V.M., GODWIN, C.I., AND ARMSTRONG, R.L., 1982. "Geology and geochronometry of the Scheelite Dome area," C.I.M.M. Bull., Vol. 75, pp. 137-142.

SINCLAIR, W.D., STEVENS, R.D., DELABIO, R.N. AND LACHANCE, G.R. 1982. "Determinations and Geological Studies, K-Ar isotopic ages," Report 16, *Geol. Surv. Can.*, Paper 82-2, 56 p.

STEVENS, R.D., LACHANCE, G.R. AND DELABIO, R.N. 1982. Age determinations and geological studies, K-Ar isotopic ages, Report 15; *Geol. Surv. Can.*, Paper 81-2.

TEMPELMAN-KLUIT, D.J. 1981. Geology of the southern Yukon, *In* Yukon Geology and Exploration 1979-80, Department of Indian Affairs and Northern Development, Whitehorse, pp. 8-31.

REPORT OF 1982 FIELD WORK ON EARLY TERTIARY CLASTICS, WEST-CENTRAL YUKON

by Grant Lowey

Department of Geology

University of Calgary

ABSTRACT

Eight lithofacies types have been identified. These include: 1) Gms - massive, matrix supported conglomerate; 2) Gm - massive or crudely bedded, clast supported conglomerate; 3) Sr - rippled sandstone; 4) Sp - planar crossbedded sandstone; 5) Sh - massive sandstone; 6) Fl - laminated sandstone, siltstone and mudstone; 7) Fsc - laminated or massive siltstone and mudstone; and 8) L - limestone. All lithofacies are present in the Sixtymile River area, but only lithofacies Sp, Sh and Fl were observed in the Grayling Creek area.

The eight types are grouped into four assemblages and are interpreted as: 1) Scott type braided river deposits 2) Donjek type braided river deposits 3) South Saskatchewan type braided river deposits and 4) lacustrine deposits.

Lithofacies assembalges are arranged into at least ten fining-upward and thining-upward megacycles reflecting a history of pulsed and rapid uplift in the source area.

INTRODUCTION

Scope of Study

Late Tertiary clastic sediments are widespread in west-central Yukon (Lowey, 1982). These deposits are fluvial and lacustrine in origin, and consist of interbedded sandstone, siltstone and conglomerate beds. They contain coal, paleoplacer gold and are potential hosts for basal-type uranium deposits.

A detailed study of these sediments was started by the author in May 1981. The present report discusses the results of field work carried out over a two week period in May 1982 in the Sixtymile River area, and one day in September 1982 in the Grayling Creek area. Data collected during these two seasons of field work will form the basis of a Ph.D thesis at the University of Calgary.

Acknowledgements

Financial and logistic support was provided by Exploration and Geological Services Division, DIAND, Whitehorse. Field assistance was provided by J.F. Lowey.

Previous Work

The first systematic geological invetigation of the report area was by Tempelman-Kluit (1974). He outlined the regional geology and general stratigraphy of the area. Prior to this work, Cockfield (1921) had made brief observations along the Sixtymile and Ladue Rivers and Bostock (1948) mapped the area immediately east of the Sixtymile River. In 1981, Lowey (1982), through a personal service contract with DIAND, began a detailed sedimentological study of these deposits.

Regional Setting

The study area lies within the Yukon Cataclastic Terrane and a major unconformity separates the Early Tertiary clastic rocks and the underlying Paleozoic and Mesozoic igneous and metamorphic rocks. The clastic rocks are usually gently folded with low dips (approximately 10 to 20 degrees). Bostock (1948) mapped a major northwest trending syncline in the Sixtymile River area and locally the sediments are highly folded and faulted.

Although no major faults have been mapped within the study area, Hughes and Long (1980) suggest that Early Tertiary deposits in west-central Yukon were deposited in continuous or discontinuous, fault bounded, continental basins. Scattered occurrence of the sediments, particularly near the summits of surrounding hills, led Cockfield (1921) to believe that most of the sediments and the original outlines of the basins were removed by erosion.

LITHOSTRATIGRAPHY

Sixtymile River area

Heavily vegetated, low rounded hills and little outcrop is typical of this area. The best exposures are found along the Sixtymile River, from Ten Mile Creek to Matson Creek. Scattered occurrences are also present along Matson Creek and on Mount Hart.

Just north of Ten Mile Creek, the deposits rest nonconformably on muscovite quartz monzonite. At this location, over 77 m of continuous section was measured. Strata generally dips northward at approximately 15 degrees and the total stratigraphic thickness of these deposits may be 200 m.

Predominant in the stratigraphically lowest (down river) part of the deposits are interbedded sandstone and siltstone beds. They are arranged in fining-upward cycles, with sandstone beds less than 1 m in thickness and siltstone beds 0.1 to 0.5 m in thickness, although beds over 9 m in thickness were observed.

Interbedded sandstone and conglomerate beds are most abundant in the stratigraphically highest (up river) part of the deposits. Here, conglomerate beds increase in number and thickness and single beds are over 15 m in thickness. Minor limestone beds occur in the lower part of the deposits while tuff beds and volcanic flows are intercalated throughout the sediments.

Grayling Creek Area

The best exposures occur along Grayling Creek and scattered outcrops are reported (Tempelman-Kluit, 1974) along the Klotassin River and its tributaries. At Grayling Creek, over 20 m of continuous section is exposed. The total stratigraphic thickness of these

Yukon Exploration and Geology 1982, p. 34-37

deposits is probably less than 100 m.

Predominant are interbedded sandstone and siltstone beds, arranged in fining-upward cycles with bed thicknesses less than 1 m. Conglomerate beds were not observed, although they are reported by Tempelman-Kluit (1979). The sediments are overlain by volcanic flows.

Age and Stratigraphic Correlation

The precise age and stratigraphic correlation of these deposits, particularly with similar deposits in the Indian River area and in Tintina Trench, awaits the results of K-Ar and palynological analyses currently underway. Previously, the deposits were assigned an Early Tertiary, probably Eocene age (Cockfield, 1921; Bostock, 1948; Tempelman-Kluit, 1974). Initial results of K-Ar analyses from a tuff bed in the Sixtymile River area (51.4 + 3.9 Ma) supports this interpretation (W.D. Sinclair, Written Comm., 1982).

LITHOFACIES ANALYSIS

Methods

Lithofacies analysis was performed by detailed measurment and description of columnar sections in the field. Thirteen sections were measured in the Sixtymile River area and one section was measured in the Grayling Creek area. These sections range from 3 to 77 m in stratigraphic thickness, with a total of 297 m of section being examined.

Lithofacies Types

Miall (1977, 1978) devised a lithofacies nomenclature and code system for describing alluvial sediments. His system was modified for this study.

Conglomerate and sandstone beds are grouped into the following five lithofacies: 1) Gms - massive, matrix supported conglomerate; 2) Gm - massive or crudely bedded, clast supported conglomerate; 3) Sp - planar crossbedded, medium - coarse-grained sandstone; 4) Sr - rippled, fine - to medium grained sandstone; and 5) Sh - horizontally laminated to massive, fine - to coarse grained sandstone, occasionally pebbly.

Fine-grained sediments are divided into three lithofacies: 1) Fl - thinly laminated and/or rippled, sandstone, siltstone and mudstone; 2) Fsc - laminated to massive, siltstone and mudstone; and 3) L - finely crystalline limestone.

Lithofacies Assemblages and Environments of Deposition

Lithofacies assemblages provide the key to interpreting the depositional environments of alluvial sediments and form the basis of various facies models. Four lithofacies assemblages are defined in this report (Fig. 1). All are present in the Sixtymile River area, but only assemblage 3 occurs in the Grayling Creek area. Assemblage 1 consists of lithofacies Gm and rarely Sh. It is interpreted as "Scott type", proximal braided river deposits. Assemblage 2, consisting of lithofacies Gm, Sh, and Fl, and rarely Sr, is interpreted as "Donjek type", intermediate braided river deposits. Assemblage 3 is interpreted as "South Saskatchewan type", distal braided river deposits, and consists of lithofacies Sh and Fl, and occasionally Sr, Sp and Fsc. Assemblage 4 consists of lithofacies Fsc and rarely Gms, Sh, Fl and L. It is interpreted as channel fill and lacustrine deposits.

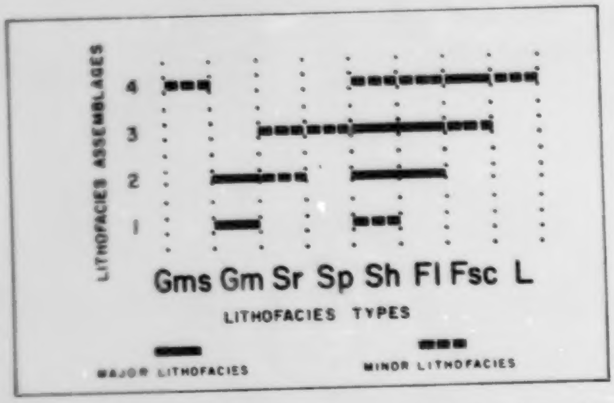


Figure 1. Schematic diagram showing the four lithofacies assemblages and the lithofacies types making them up.

Composition of Conglomerate Beds

The composition of conglomerate beds was previously reported in Lowey (1982). Results are briefly summarized in Figure 2. Generally, the conglomerate composition changes from metamorphic-rich to sedimentary-rich, and back to metamorphic-rich pebbles. Vein quartz, metamorphic and igneous clasts were all locally derived. Chert clasts (and possibly sandstone and siltstone clasts) were derived from the Ogilvie Mountains north of the study area (mainly from the Road River Formation, Unit 9, Green, 1972).

Sedimentary History

The vertical sequence in which lithofacies assemblages are stratigraphically stacked is fundamental to interpreting the sedimentary history of an area. The sequence of lithofacies assemblages may reflect major changes in climate, sea level, or tectonics, such as basin subsidence or source area uplift (Figure 3). Lithofacies assemblages are arranged into at least 10 fining-upward and thinning-upward megacycles. They range from 14 to 48 m in thickness and begin with proximal or intermediate braided river deposits (and occasionally distal braided river deposits) and end with distal braided river deposits or lacustrine deposits. These megacycles are interpreted as representing pulsed uplift in the source area.

Each megacycle indicates that uplift was initially rapid, resulting in an influx of conglomerate and coarse sandstone debris into the basin, followed by a decrease in the rate of uplift and the deposition of finer-grained sediments. The intensity of these uplifts climaxed with megacycles 6, 7 and 8, which corresponds with the greatest influx of sedimentary clasts and the thickest conglomerate beds into the basin.

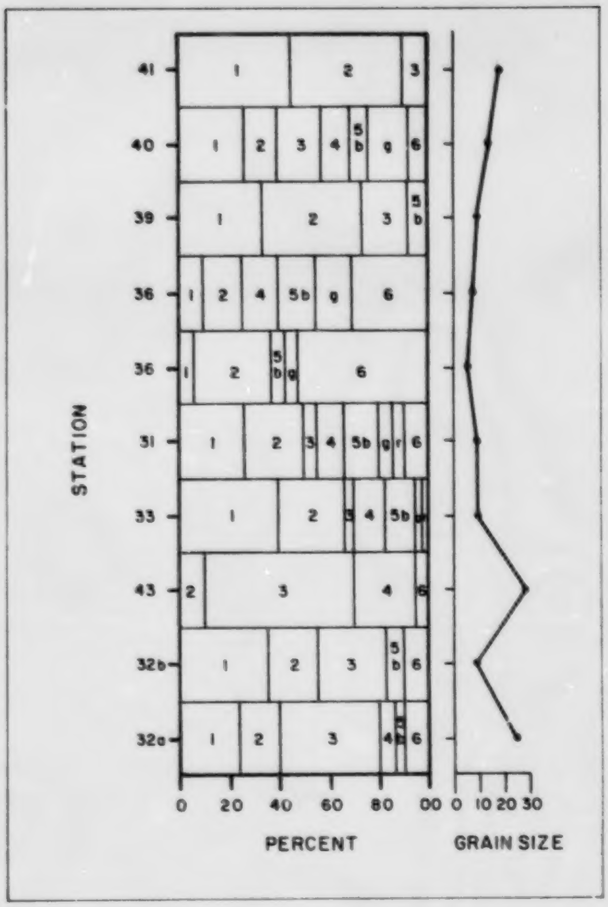


Figure 2. Composition of conglomerate beds at individual station sites. Under the per cent column, 1 = quartz and gneiss; 3= schist; 4 = slightly to highly porphyritic volcanic clasts and rare granitic clasts; chert, where b is black, g is grey and green; and 6 = sandstone and siltstone. The grain-size column refers to the largest clast observed at that station).

In summary, clastic sediments in the Sixtymile River area were deposited in a continental basin that was fed by southward flowing braided rivers. The depositional environments shifted from proximal to distal braided rivers and lacustrine environments, reflecting a history of pulsed and rapid uplift in the source area.

ADDENDUM

Continuing work on clastic sedimentary rocks in the Indian River and Sixtymile river areas has resulted in two important discoveries. First, pyritized radiolarians found in a chert pebble from the Red Conglomerate Unit, Indian River area (Lowey, 1981) were identified by B. Murchy of the United

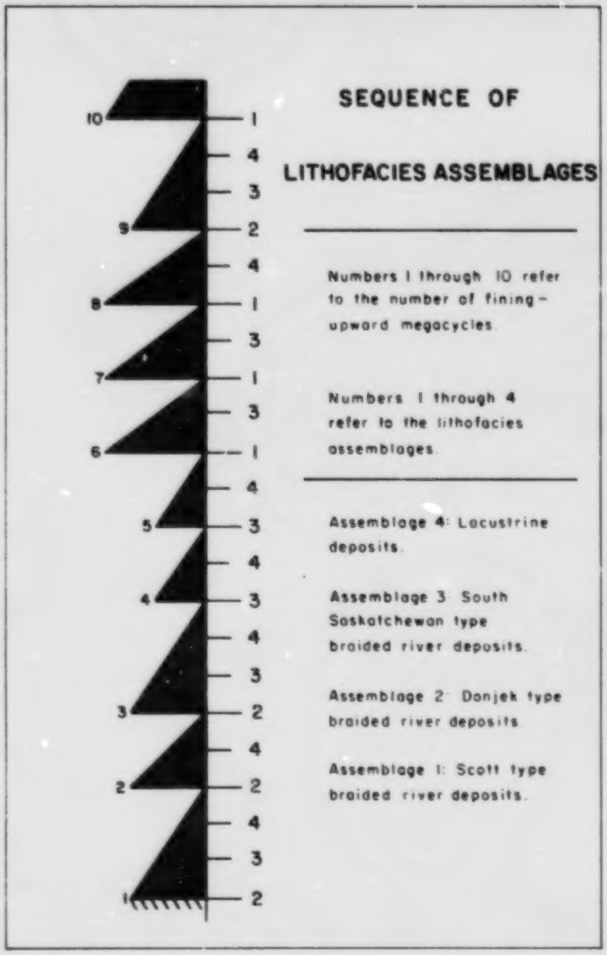

SEQUENCE OF
LITHOFACIES ASSEMBLAGES
Numbers 1 through 10 refer to the number of fining-upward megacycles.
Numbers 1 through 4 refer to the lithofacies assemblages.
Assemblage 4: Lacustrine deposits.
Assemblage 3: South Saskatchewan type braided river deposits.
Assemblage 2: Donjek type braided river deposits.
Assemblage 1: Scott type braided river deposits.
10
9
8
7
6
5
4
3
2
1
1
4
3
2
4
1
3
1
3
1
4
3
4
3
4
3
2
4
2
4
3
2

Figure 3. Schematic diagram showing the sequence of lithofacies assemblages in the Sixtymile River area.

States Geological Survey (written communication, 1983) as Mesozoic, very probably Triassic in age. Second, examination of palynomorphs by the author and Dr. L.V. Hills of the University of Calgary (personal communication, 1983) indicates that clastic sedimentary rocks in the Sixtymile River area are probably Maastrichtian in age, while those in the Indian River area are definitely Albian in age. Also, dinoflagellates and acritarchs (marine microfossils) are present in the uppermost part of the sediments in the Indian River area.

Abundant chert of Triassic age occurs in the Cache Creek Group in southeastern Yukon-northeastern British Columbia. This implies an ultimately southeasterly source area for part of the clastics in the Indian River area. Note however, that a polycyclic origin for the chert clasts has not been ruled out.

Clastic sediments in the Indian River area are mostly fluvial in origin although the uppermost part of the sediments appear to be marine. They are chronostratigraphically equivalent to the lowermost part of the Monster Formation (Albian to Tertiary in age, Green, 1972), the lowermost part of the Bonnet Plume Formation (Albian to Paleocene in age, Rouse and Srivastava, 1972), and possibly the uppermost part of the Keno Hill Quartzite (Lower Cretaceous in age, Tempelman-Kluit, 1970) and the uppermost part of the Tantalus Formation (Upper Jurassic to Lower Cretaceous in age, Wheeler, 1961).

REFERENCES

BOSTOCK, H.S. 1942. Ogilvie, Yukon Territory; Geol. Surv. Can., Map 711A.

COCKFIELD, W.E. 1921. Sixtymile and Ladue River area; Geol. Surv. Can., Memoir 123.

GREEN, L.H. 1972. Geology of Nash Creek, Larsen Creek, and Dawson map-areas, Yukon Territory; Geol. Surv. Can., Memoir 364.

HUGHES, J.D., and LONG, D.F. 1980. Geology and coal resource potential of Early Tertiary Strata along Tintina Trench, Yukon Territory; Geol. Surv. Can., Paper 79-32.

LOWEY, G.W. 1982. Report on Fieldwork on Early Tertiary clastics, west-central Yukon, p. 51-57, in D.I.A.N.D., 1982, Yukon Exploration and Geology 1981, 281 pp.

MIALL, A.D. 1977. A review of the braided river depositional environment; Earth Science Reviews, 13, 1-62.

MIALL, A.D. 1978. Lithofacies types and vertical profile models in braided river deposits: a summary; in A.S. Miall, e.d., CSPG Memoir 5, 597-604.

ROUSE, G.E., and SRIVASTAVA, S.K. 1972. Palynological zonation of Cretaceous and Early Tertiary rocks of the Bonnet Plume Formation, Northeastern Yukon, Canada; Canadian Journal of Earth Sciences, 9, 1163-1179.

TEMPELMAN-KLUIT, D.J. 1970. Stratigraphy and Structure of the "Keno Hill Quartzite" in Tombstone River - Upper Klondike River map-areas, Yukon Territory; Geol. Surv. Can., Bull. 180.

TEMPELMAN-KLUIT, D.J. 1974. Reconnaissance geology of Aishihik Lake, Snag, and part of Stewart River map-areas, west-central Yukon; Geol. Surv. Can., Paper 73-41.

WHEELER, J.O. 1961. Whitehorse map-area, Yukon Territory; Geol. Surv. Can., Memoir 312.

PETROLOGY AND GEOCHEMISTRY
OF THE PATTISON ALASKITE PLUTON

by Gregory V. Lynch and Calvin Pride
Department of Geology, University of Ottawa
and
Pat Watson
Exploration and Geological Services Division
DIAND, Whitehorse

ABSTRACT

The Pattison Pluton is a high level Tertiary subaluminous alaskite that is part of a northwest trending chain of igneous intrusions in the Yukon Crystalline Terrane, southwestern Yukon. It is roughly circular in form with a diameter of about 18 km and a funnel-like profile. Crosscutting it are a series of shallowly dipping aplite dykes which intruded into open fractures. Compositionally and mineralogically, the alaskite body and aplite dykes are very uniform but the pluton is texturally and gradationally divided into a fine-grained upper border phase, a medium grained graphic, strongly miarolitic, weakly porphyritic phase, and a lower coarse-grained phase.

Due to eutectic crystallization, no strong major element trends are found within the pluton and dykes. Trace element chemistry, however, shows an apparent liquid line of descent with the fine grained alaskite the least differentiated and the aplite dykes the most differentiated. The medium and coarse-grained alaskites plot in between these. Rayleigh fractional crystallization of alkali feldspar accounts for these trends.

Textural zonation evolved by the initial chilling of the originally H_2O-poor magma at its upper edges. Crystallization of anhydrous phases from the melt had the effect of increasing the volatile pressure within the enclosed chamber. The volatiles migrated to and concentrated in the upper regions where the melting temperature was depressed, causing the pluton to crystallize from the bottom up. This allowed for the lower regions to reach more advanced stages of phenocryst crystallization, hence forming the lower coarse grained alaskite. The volatile pressure eventually exceeded the confining pressure, resulting in failure of the surrounding rocks and retrograde boiling, as well as vertical extension and lateral injection of residual magma due to filter pressing to form the aplite dykes. This final series of events also resulted in the formation of the graphic groundmass, straining of the minerals within the pluton, brecciation of some of the surrounding rocks, as well as quartz veining and molybdenum mineralization.

Introduction

The Pattison Pluton is part of the Dawson Range in western Yukon between the Klotassin and Nisling Rivers, about 40 km east of Wellesley Lake, 130 km west-northwest of Carmacks and 265 km northwest of Whitehorse, in the Snag Map area, 115 J (Fig. 1). Barren flat-topped ridges cover most of the intrusion and large castellated outcrops in the form of fins, block and pillars are a common feature of the ridges in this unglaciated part of Canada (Fig. 2).

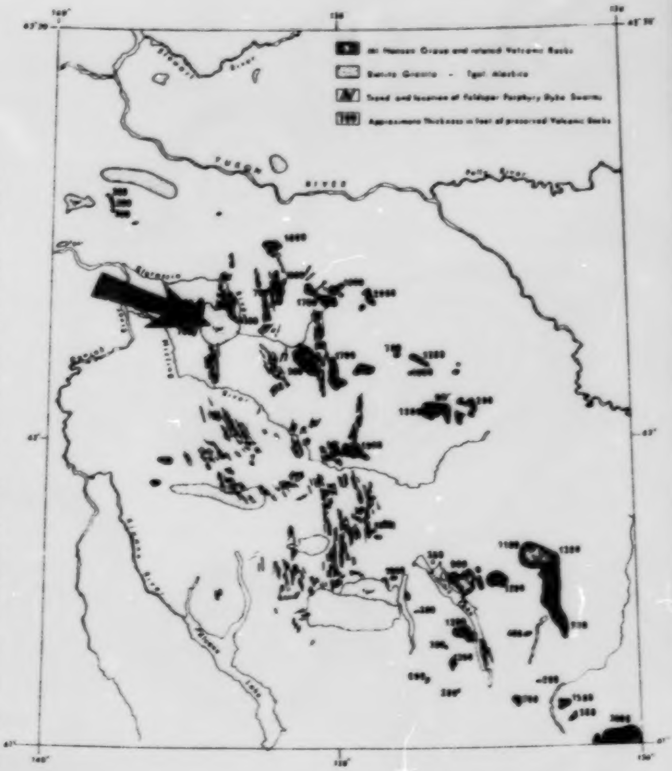


Figure 1. Location of Pattison Pluton between the Klotassin and Nisling Rivers (modified map from Tempelman-Kluit, 1974).

Figure 2. Photograph of ridgetops showing castellated outcrops in Pattison Pluton.

Yukon Exploration and Geology 1982, p. 38-49

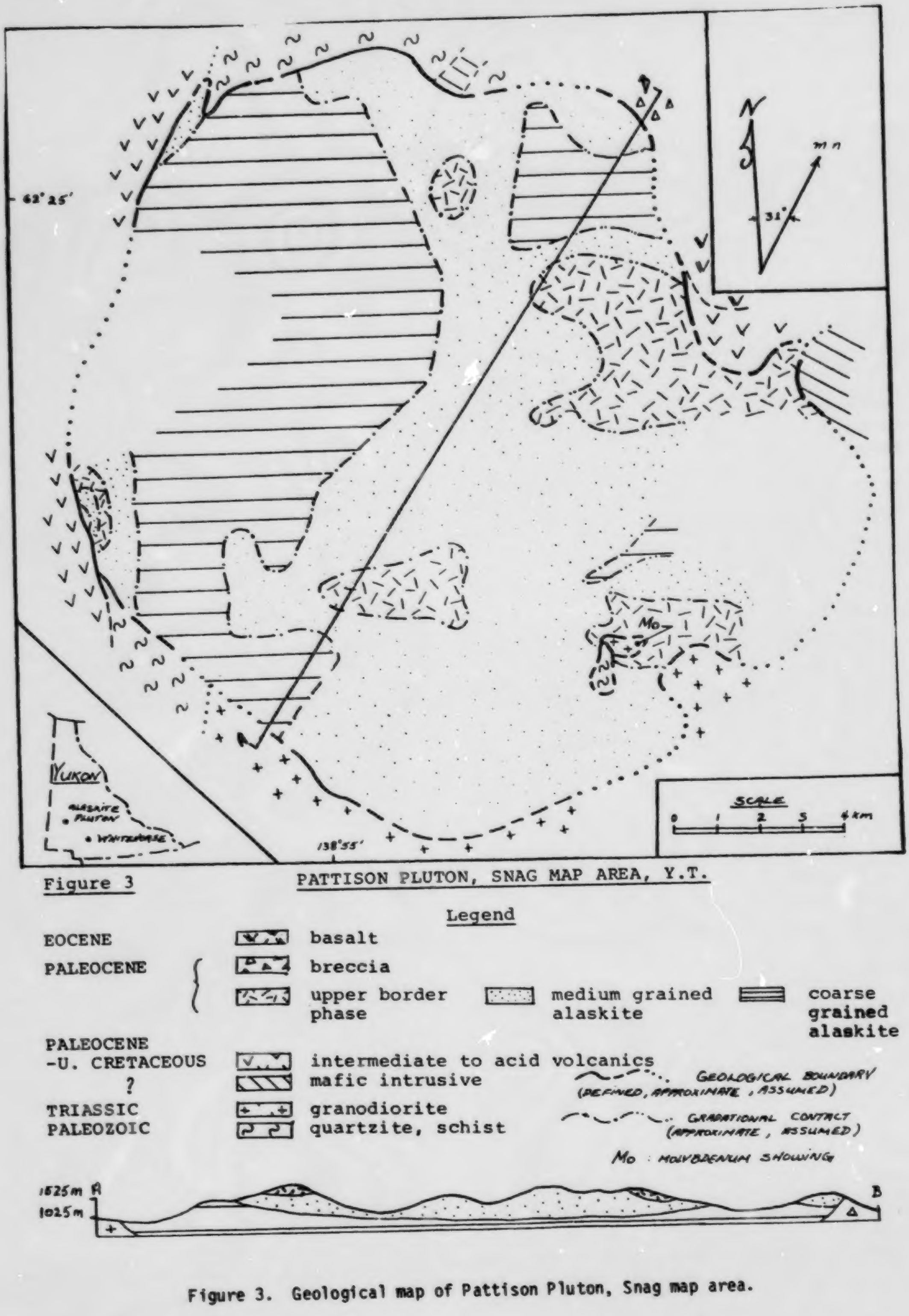

62°25'
N
mn
31°
YUKON
ALASKITE PLUTON
WHITEHORSE
Mo
138°55'
SCALE
0 1 2 3 4 km
Figure 3
PATTISON PLUTON, SNAG MAP AREA, Y.T.
Legend
EOCENE basalt
PALEOCENE breccia
upper border phase
medium grained alaskite
coarse grained alaskite
PALEOCENE -U. CRETACEOUS intermediate to acid volcanics
? mafic intrusive
TRIASSIC granodiorite
PALEOZOIC quartzite, schist
GEOLOGICAL BOUNDARY (DEFINED, APPROXIMATE, ASSUMED)
GRADATIONAL CONTACT (APPROXIMATE, ASSUMED)
Mo : MOLYBDENUM SHOWING
1525m A
1025m
B

Figure 3. Geological map of Pattison Pluton, Snag map area.

Local and Regional Geology

The Pattison Pluton is part of a group of intrusions known as the "Nisling Range Alaskite" (Tempelman-Kluit, 1974). These are related in time and in space with other biotite granite intrusions, north trending feldspar porphyry dyke sets, and rocks of the Mt. Nansen Group (Fig. 1). The whole group forms a northwest trending belt in the Yukon Crystalline Terrane.

Nisling Range Alaskite is thought to be coeval with Mt. Nansen Group volcanic rocks which have been dated at 55-70 Ma. (Tempelman-Kluit, 1981). The Pattison Pluton crosscuts the Mt. Nansen Group volcanic rocks along the northeastern and northwestern edges of the intrusion (Fig. 3). Here the volcanic rocks have been metamorphosed to the hornblende-hornfels facies (Lynch, 1983). For this reason, the Pattison Pluton is thought to be Paleocene in age. The pluton is also in contact with granodiorite (from the Klotassin Batholith?) along its southern edge as well as quartzite and schist along the northern and southwestern edges (Fig. 3). In the northeast, basalt and volcanic breccia from the Carmacks Group are exposed.

The Pattison Pluton is roughly circular in form with a diameter of 18 km. It is a miarolitic, graphic alaskite, ie a granitic rock with less than 10 percent by volume of mafic minerals (Strecheisen, 1976). The pluton is mineralogically and chemically homogeneous. However, it may be texturally divided into a fine grained upper border phase, a coarse grained vertically lower alaskite, and a porphyritic medium grained alaskite in between (Fig. 3). The changes are gradational and proximity to the wallrock does not appear to have had a large influence on the textural distribution. The pluton is crosscut by sets of parallel, flat lying to shallowly dipping aplite dykes.

A roof pendant of granodiorite and quartzite occurs in the southeast end of the pluton (Fig. 3). In its vicinity, granodiorite and surrounding alaskite are cut by numerous quartz veins and molybdenite occurs in the veins crosscutting the granodiorite.

PETROGRAPHY

Course Grained Alaskite

Coarse grained alaskite (CGA) is porous, crumbly and has penetrative rust staining and weathering and a consequent orange-white colour. It has a massive granitic texture with subhedral white feldspar laths and glassy grey quartz grains forming 90 percent by volume (Fig. 4). Microscopic observations show that the quartz is anhedral to subhedral and is often slightly skeletal (Fig. 5). Quartz grains range in size from 1 mm to 4 mm and comprise approximately 35 - 40% of the rock. Microperthite is lath-like or in anhedral patches. It may reach sizes of up to 12 mm. The anhedral patches are interstitial and fill the spaces created by the skeletal growth of quartz. Carlsbad twins are a common feature of the microperthite. Orthoclase and microperthite may occupy up to 50 percent of the volume. Replacement perthite and antiperthite have also been identified.

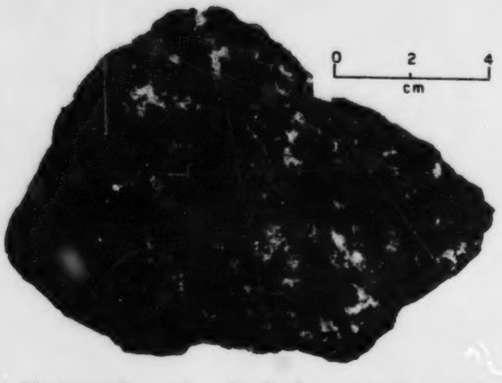


Figure 4. Photograph of typical coarse grained alaskite (scale in cm).

Sodic plagioclase makes up only about 10 percent of the volume. It is typically subhedral, from 1 to 3 mm in size and in all of the alaskite phases, normal zoning may be present. Plagioclase is commonly altered with small flecks of sericite, minutely pitted surfaces and weathered out cores of zoned plagioclase.

Biotite is fine to medium grained and about 5 percent by volume. It is anhedral and fills in wedge shaped gaps between quartz and feldspar crystals. Most of the biotite is brown, but very fine grained deuteric green biotite may also be present. Minor amounts of biotite are altered to chlorite.

Small amounts of fine grained anhedral magnetite and hematite are present. Biotite-magnetite mixtures occur as pseudomorphs after pyroxene. Allanite, fluorite and zircon (or possibly monazite) are also minor constituents. The dark brown, pleochroic, nonmetamict allanite is fine grained and anhedral to subhedral in form (Fig. 6). Zircon (or monazite) grains occur as very fine grained subhedral crystals, locally as inclusions with pleochroic halos within

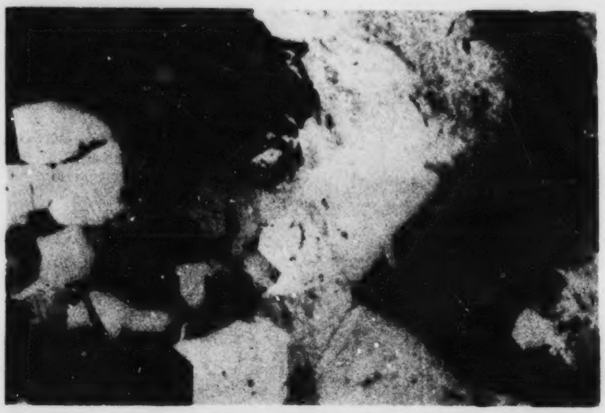


Figure 5. Photomicrograph of coarse grained alaskite showing quartz and microperthite. Notice the weakly skeletal nature of quartz (cross polars, field of view 7 mm x 5 mm).

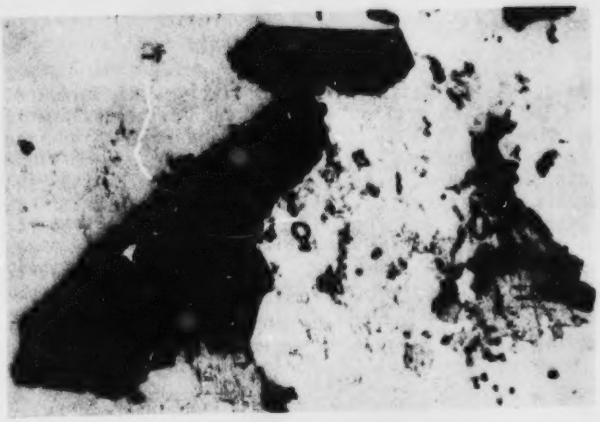


Figure 6. Photomicrograph showing two subhedral allanite crystals with possibly some minute zircon or monazite crystals (plane transmitted light, field of view 1.8 mm x 1.2 mm).

biotite. Trace amounts of anhedral fluorite up to 2 mm in size are found mainly in the miarolitic cavities.

Miarolitic cavities occupy less than 5% of the volume and these are usually no more than 1 cm in length with irregular forms. The cavities are lined with some fluorite and biotite but mostly with subhedral to euhedral alkali feldspar and smoky quartz.

Mineral grains within the coarse grained alaskite are commonly strained. Strain features include fractured minerals, contorted biotite (Fig. 7), offset and bent twinning in feldspar and undulose extinction in quartz.

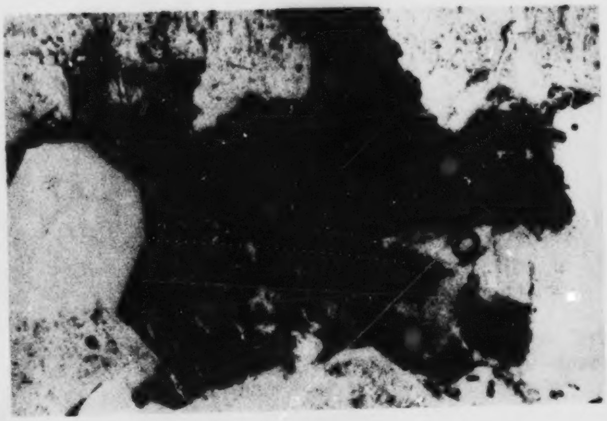


Figure 7. Photomicrograph of highly strained interstitial biotite amongst quartz (clear) and feldspar (mottled) grains (plane transmitted light, field of view 1.8 mm x 1.2 mm).

Medium Grained Alaskite

The coarse grained alaskite grades into the medium grained alaskite which is found at higher altitudes. The latter has a porphyritic texture with subhedral alkali-feldspar lath-shaped phenocrysts occupying 20 to 30 percent by volume (Fig. 8). Phenocrysts are mostly 3 to 5 mm in length but may be up to 10 mm. They are surrounded by a matrix of graphic to micrographic quartz and feldspar (Fig. 9). Miarolitic cavities are most abundant and largest within the medium grained alaskite. They have irregular shapes, may occupy up to 15% of the volume and are commonly 1 to 2 cm in length but locally up to 20 cm. Cavities are lined with euhedral, singly terminated alkali feldspar and smoky quartz crystals with lesser amounts of biotite and fluorite. Phenocrysts are microperthite or orthoclase. Microcline and anorthoclase have also been identified. Subhedral plagioclase crystals, 0.5 to 3 mm in size, fill 5 to 10 percent of the volume. Optically determined anorthite content is An_4 to An_{28} Some of the crystals are zoned and commonly sericite is an alteration product.

Figure 8. Photograph of typical medium grained alaskite. Note the miarolitic cavities (dark), porphyritic texture and graphic groundmass (scale in cm).

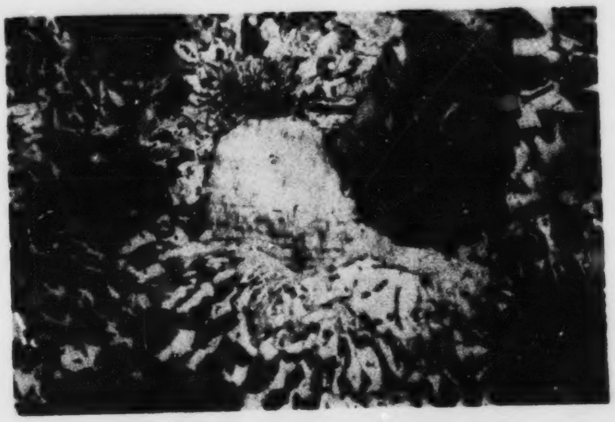


Figure 9. Photomicrograph of medium grained alaskite demonstrating an orthoclase phenocryst surrounded and mantled by a graphic groundmass (crossed polars, field of view 7mm x 5 mm).

Quartz is skeletal and dendritic. Graphic to micrographic texture is very well developed and dominates the thin sections (up to 70 percent of the area). Skeletal quartz grains may be as large as 3 mm but appear most often to be less than 1 mm in size. Cross-sections of the dendritic branches are in the form of very small triangles and trapezohedrons or other similar shapes. These occur in optically continuous clusters which are included in and surrounded by interstitial micrographic crystals forming the graphic intergrowths. The graphic intergrowths occur as radiating mantles around the feldspar phenocrysts (Fig. 9).

Minor mineral phases and mineral strain features are similar to those in the coarse grained alaskite. Clinopyroxene (probably augite) is more abundant in the medium grained alaskite. The 1 mm subhedral grains are strongly altered to hornblende, tremolite and a mixture of biotite and very fine grained opaque minerals.

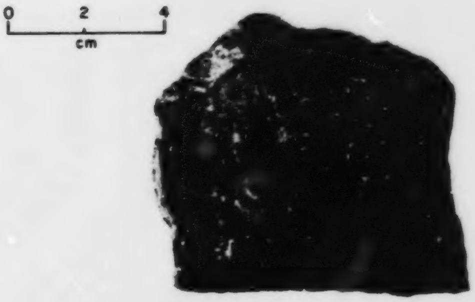


Figure 10. Photograph of fine grained alaskite. Note the small miarolitic cavities and relatively sparse phenocrysts (scale in cm).

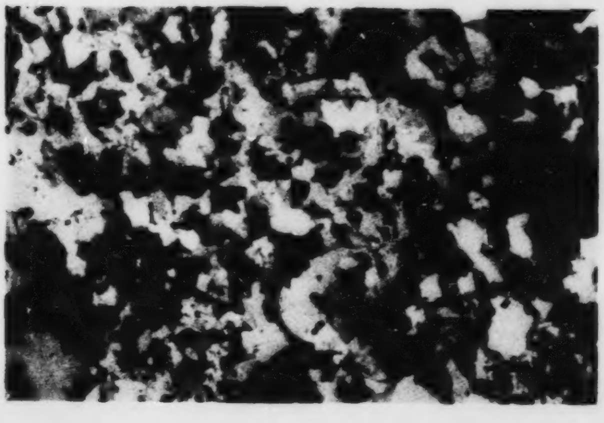


Figure 11. Photomicrograph of fine grained alaskite. Note the anhedral quartz, microperthite and weak development of micrographic texture (crossed polars, field of view 7 mm x 5 mm).

Fine Grained Alaskite

The fine grained alaskite forms the upper capping of the Pattison Pluton. It grades downwards into the medium grained alaskite and its mineralogy is the same as in both the coarse and medium grained alaskites. However, it is more competent, much finer grained and much less abundant in phenocrysts and graphic intergrowths. Most of it is made up of allotriomorphic granular, fine grained anhedral quartz and microperthite in roughly equal proportions (Fig. 11). Corrosion embayments are present in quartz crystals and myrmekite occurs in microperthite. Plagioclase (about An_{21}) is present in small amounts and the biotite content is approximately 10%. Small, 1 to 5 mm miarolitic cavities are rare and free of mineral linings.

Spherulites locally occur in fine grained alaskite near the roof pendant in the southeast section of the pluton (Fig. 2). They are about 1 mm in diameter and are composed of radiating assemblages of alkali feldspar which have been partly altered to sericite. Some have a very fine grained crystal at their centers.

Silicification is common within the fine grained alaskite - crypto-crystalline silica replacing feldspar. Minor minerals and mineral strain features are similar to those in the other alaskites.

Aplite Dykes

Aplite dykes are common throughout the pluton and are best exposed in the tall castellated outcrops. The dykes are 10 to 50 cm wide and horizontal to shallowly dipping (Fig. 12). Sets of two or three parallel dykes with about 5 - 10 m separating them occur in the taller outcrops. No dykes were found crosscutting the fine grained alaskite, but this could

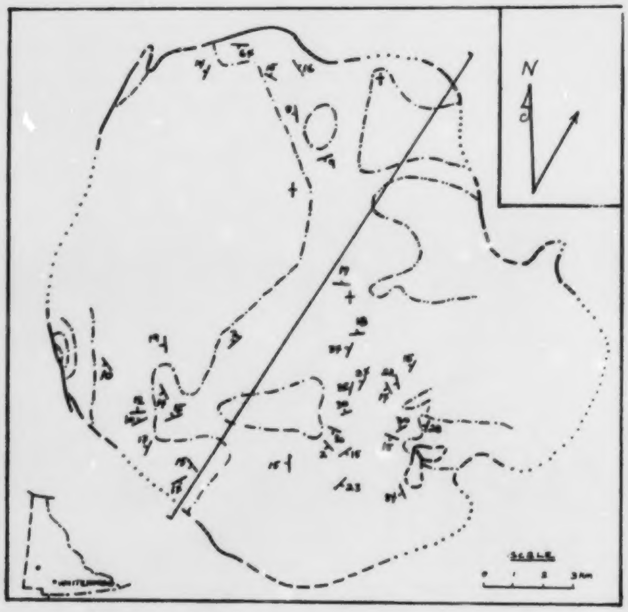


Figure 12. Strike and dip of the aplite dykes.

be due to the relatively poor exposure of the fine grained alaskite. The dykes crosscut the medium and coarse grained alaskite phases and also intrude Mt. Nansen Group volcanic rocks adjacent to the pluton.

The aplite is texturally and mineralogically very similar to the fine grained alaskite. Quartz and feldspar are evenly distributed and both are anhedral and irregular in form (Fig. 13). Most of the feldspar is microperthite, with some orthoclase and rare microcline. Plagioclase is absent. Micrographic intergrowths are rare and minor mineral phases are as in the alaskites. However, biotite is usually green, very fine grained and tends to occur in clusters.

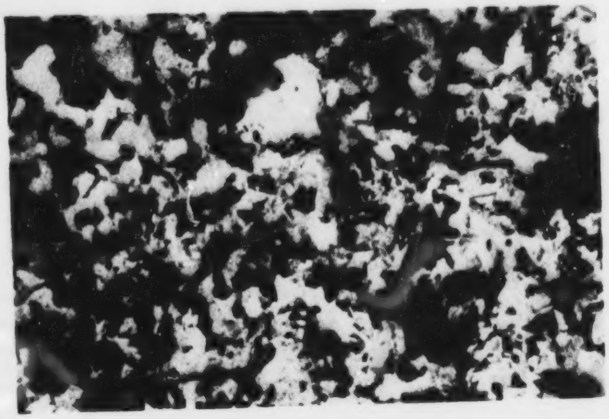


Figure 13. Photomicrograph of aplite showing fine grained aggregate of anhedral quartz and microperthite (crossed polars, field of view 7 mm x 5 mm).

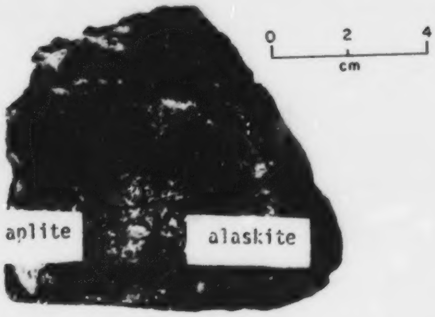


Figure 14. Photograph of aplite and alaskite with row of medium grained micrographic quartz and feldspar crystals perpendicular to aplite-alaskite contact (scale in cm).

Unaltered, thin, prismatic hornblende is present in the aplite but only near the contacts of the dykes with the host alaskite. In some instances, these subhedral to euhedral crystals are quite densely clustered along a contact and are perpendicular to it. The hornblende prisms vary widely in size and may be up to 1.5 cm long. The contact zone of the dykes with the host alaskite also contain closely stacked rows of medium to coarse dendritic quartz crystals intergrown with perthite in a micrographic texture perpendicular to the contacts (Fig. 14).

Miarolitic cavities are locally present, but they are small and not lined with ingrowing crystals. Unlike the alaskites, strain features do not occur in the aplite dyke minerals.

Molybdenum Mineralization and Alteration of the Alaskite

Molybdenum mineralization is found in quartz veins within the hornblende granodiorite roof pendant at the south-east end of the pluton (Fig. 2). The quartz veins are commonly about 1 cm wide and may contain some anhedral calcite and zoisite. Small amounts of medium to fine grained molybdenite in flakes are found along the vein-host rock interfaces. Similar veins are present in the alaskite immediately surrounding the roof pendant, but no mineralization has been noted in them. However, much of the alaskite here is strongly altered. In some samples, intense sericitization is evident with sericite and medium grained granular quartz as well as minor amounts of very fine grained apatite, biotite, opaque minerals, sillimanite, zircon, and medium grained tourmaline. Potassic alteration is also present in the same area, again with granular quartz as one of the main constituents but also with considerable amounts of fine grained green biotite, some sericite and minor amounts of garnet, opaque minerals and apatite. The biotite also occurs as small veinlets.

Quartz veins are occasionally seen in areas away from the roof pendants but appear to be restricted to the fine and medium grained alaskites. These veins are not associated with the above alteration assemblages. Silicification is sporadically distributed in the medium and fine grained alaskites as well. As a result of silicification, quartz crystals and dendrites are preserved but most or all of the feldspar is replaced by cryptocrystalline silica.

The molybdenum bearing fluids probably emanated from the alaskite pluton during a late stage of its evolution. Because the molybdenite occurs at the vein to wall rock interface, it is postulated that precipitation was due to chemical reactions of the fluid with the wall rock.

Intrusive Breccia Unit

Intrusive breccia is characterized by subangular to subrounded clasts from diverse origins. The clasts are as large as 10 cm but size is quite variable. They comprise quartzite, schist, gneiss, volcanic rocks, and mafic rocks. Although no alaskite clasts were seen, the matrix is thought to have been partly derived from the alaskite because the matrix consists of fragmental quartz, alkali feldspar, plagioclase, biotite and opaque minerals with minor amounts of what appears to be allanite. The matrix occupies about 25% of the volume.

CHEMISTRY

Major and Minor Elements

Twenty-six alaskite samples and three samples of the surrounding volcanic rocks were analyzed for major and minor elements by X-ray fluorescence. Five alaskite samples and one volcanic sample were analyzed for rare earth elements by neutron activation. The geochemistry sample distribution is shown in Figure 15.

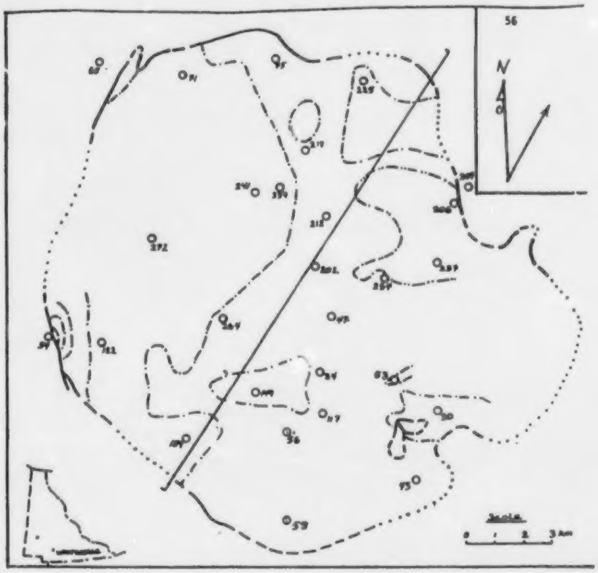


Figure 15. Map showing location of samples for geochemistry.

The Pattison is an acid subaluminous alkali granite. In terms of major elements, the alaskite is very uniform across all textural subdivisions including the aplite dykes (Tables 1 and 2). No trends are seen. Conversely, the large ion lithophile elements Ba, Rb and Sr vary considerably within the pluton according to their textural category. Figure 16, Ba versus Rb demonstrates a good linear trend and an apparent liquid line of descent; three of the four fine grained alaskite samples have high Ba and low Rb, the dykes have low Ba but high Rb and the medium grained alaskite clusters with the coarse grained alaskite in between these. In the Ba versus Sr graph (Fig. 17), the early formed fine grained alaskite samples have the high Ba and Sr contents, the late dykes have low Ba and Sr while the medium and coarse grained alaskites occur together between these. The textural subdivisions are gradational and the observed chemical overlapping of the alaskite is to be expected. However, the dykes are a crosscutting feature and Ba and Sr values do not overlap those of the alaskite, even though it is apparent that the dykes were derived from a residual phase of the alaskite.

On both of the large ion lithophile element plots (Fig. 16 and 17), vectors are drawn which show the trends that single crystal phases would impart on the melt during Rayleigh fractional crystallization.

Table 1. Chemistry of the coarse grained alaskite, aplite dykes and volcanics.

	COARSE GRAINED ALASKITE							APLITE DYKES					VOLCANICS		
Sample No.	184	272	122	710	230	341	53	202	36	117	47B	47C	340	65	300
% SiO_2	76.95	74.90	74.93	75.12	75.30	75.53	76.33	76.35	76.45	76.60	75.26	73.01	64.61	59.11	49.25
Al_2O_3	12.16	12.87	12.35	12.77	12.64	12.94	12.50	12.23	12.30	12.33	11.73	11.97	16.31	16.40	14.65
Fe_2O_3	1.24	1.38	1.05	1.34	1.00	1.29	1.00	1.15	1.36	1.23	2.05	3.00	4.93	6.67	9.74
MgO	0.36	0.29	0.27	0.27	0.25	0.27	0.29	0.29	0.33	0.60	0.27	0.33	1.51	2.61	5.31
CaO	0.32	0.42	0.50	0.28	0.42	0.35	0.46	0.53	0.51	0.16	0.44	0.67	4.90	6.35	10.31
Na_2O	3.91	3.86	3.77	3.98	3.70	4.24	4.07	4.51	4.44	4.44	3.75	3.61	2.75	3.66	1.61
K_2O	4.64	5.23	4.67	5.01	5.06	5.06	4.86	4.23	4.39	4.42	4.28	4.05	2.10	2.00	2.50
TiO_2	0.06	0.07	0.07	0.07	0.07	0.06	0.07	0.05	0.07	0.06	0.12	0.30	0.61	0.81	1.12
P_2O_5	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.12	0.19	0.35
MnO	0.01	0.01	0.01	0.01	0.00	0.01	0.03	0.01	0.01	0.03	0.01	0.05	0.10	0.12	0.18
S	0.01	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.0
ppm Ba	405	450	390	525	479	467	472	53	67	94	85	96	1205	1402	795
Cr	9	10	0	0	8	9	0	9	7	10	0	3	2	38	103
Zr	180	188	194	202	187	195	178	191	220	208	205	181	211	404	150
Sr	12	10	8	10	12	13	14	0	0	0	1	5	1024	527	542
Rb	163	196	150	168	179	171	158	217	241	261	180	183	68	83	63
Y	44	45	52	60	38	53	53	87	74	25	59	72	18	22	27
Nb	34	11	28	26	22	30	-	68	52	53	-	-	-	5	0
Zn	56	60	92	113	49	60	79	59	77	90	107	163	96	68	85
Ni	21	7	8	11	6	7	97	8	7	0	120	48	21	10	20
TOTAL	99.757	98.889	98.154	98.980	98.741	99.838	100.127	99.437	99.795	100.046	98.812	98.172	98.544	99.155	94.461

Table 2. Chemistry of the medium and fine grained alaskites.

	MEDIUM GRAINED ALASKITE										FINE GRAINED ALASKITE			
Sample No.	47A	234	217	43	75	212	225	58	264	56	206	237	39	140
% SiO_2	75.34	75.13	74.49	74.62	74.16	75.64	76.44	75.06	74.90	76.30	75.42	74.37	74.70	75.78
Al_2O_3	12.60	12.56	12.70	12.64	12.90	12.76	12.67	12.71	12.64	12.80	12.62	12.66	12.00	12.30
Fe_2O_3	1.77	1.41	1.48	1.00	1.32	1.15	0.94	1.41	1.31	1.73	0.74	1.05	0.89	1.33
MgO	0.30	0.32	0.31	0.36	0.32	0.33	0.34	0.31	0.26	0.30	0.27	0.21	0.30	0.31
CaO	0.53	0.42	0.52	0.37	0.51	0.30	0.27	0.30	0.40	0.43	0.50	0.41	0.43	0.33
Na_2O	3.83	4.03	4.05	4.15	4.30	4.06	4.33	4.10	4.25	4.13	4.10	3.83	4.06	3.90
K_2O	5.02	4.79	4.90	4.86	4.91	4.93	4.89	4.94	4.91	4.98	4.90	4.93	5.61	4.85
TiO_2	0.09	0.08	0.08	0.11	0.08	0.09	0.07	0.08	0.07	0.10	0.09	0.09	0.09	0.07
P_2O_5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MnO	0.02	0.01	0.01	0.05	0.01	0.01	0.01	0.02	0.01	0.03	0.01	0.06	0.00	0.03
S	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.0	0.00	0.00	0.00	0.01
ppm Ba	520	337	475	1205	517	475	879	467	441	527	840	711	833	296
Cr	0	10	8	10	9	9	9	7	10	0	9	8	7	8
Zr	200	187	200	268	216	199	214	195	203	200	214	236	232	190
Sr	15	9	12	40	12	11	9	14	13	29	29	16	21	6
Rb	160	164	155	144	148	149	171	160	173	152	150	158	159	176
Y	53	57	43	35	56	41	25	49	36	43	51	45	47	46
Nb		29	23	29	28	27	0	26	24	-	22	29	29	29
Zn	118	112	79	142	84	86	69	58	67	82	86	115	218	69
Ni	33	8	9	8	7	10	5	11	6	124	8	9	9	7
TOTAL	99.002	98.798	98.651	98.978	98.690	99.420	100.072	99.060	98.939	101.000	98.834	98.762	98.717	99.168

Plagioclase and mostly K-feldspar are responsible for the trends within the Pattison Pluton. Biotite does not appear to have been an influence. This is due to its low abundance and because of its late appearance. Rayleigh fractional crystallization assumes that only the crystal surface is in equilibrium with the melt (Tindle and Pearce, 1981). This seems to be a good assumption for the Pattison Pluton since some of the plagioclase crystals are zoned.

The partition coefficients for the alaskite were likely constant throughout its evolution because temperature dependance of partition coefficients is small for these types of melts (Mahood & Hildreth, 1983) and its composition was constant throughout crystallization. Partition coefficients used are shown in Table 3.

Table 3. Mineral/Melt partition coefficients.

	1. K-feldspar	2. plagioclase	3. biotite	4. clinopyroxene	5. hornblende
Ba	12.9	1.21	3.21	0.131	0.044
Rb	1.04	0.091	2.51	0.032	0.014
Sr	3.55	4.12	0.080	0.516	0.022

1. 2. and 3. from Mittlefehldt and Miller (1983),
4. and 5. from Arth and Hanson (1975).

Since there are no major element trends to correspond with the observed minor element and textural variations, it can be assumed that crystallization of the Pattison Pluton occurred mostly at a natural

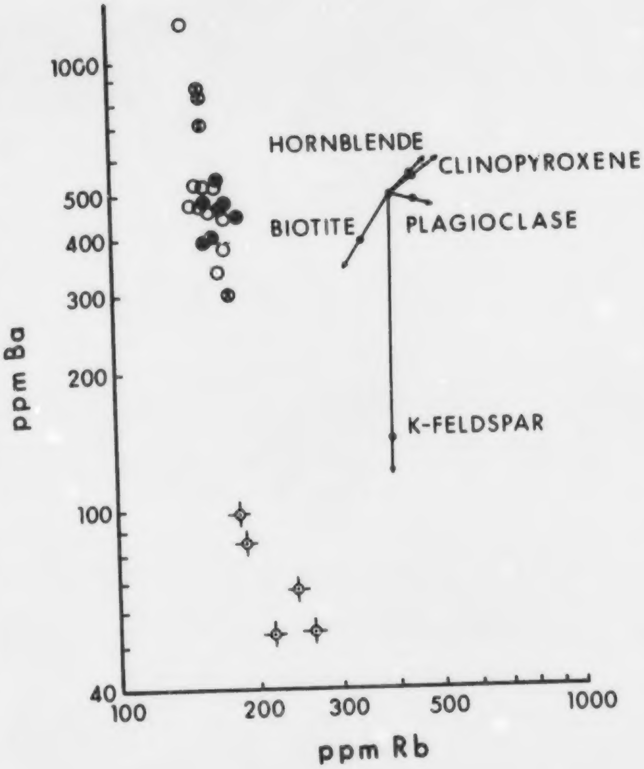


Figure 16. Ba versus Rb plot for the Pattison Pluton; alaskite - coarse grained (●), medium grained (○), fine grained (⊕) and aplite dyke (✧). Vectors are drawn for Rayleigh fractional crystallization of individual phases, from the equation

$$\frac{C_L}{C_O} = F^{(D_a - 1)}$$

C_L = concentration of element a in the residual melt,

C_O = concentration of element a in the original melt,

D_a = bulk distribution coefficient for element a,

F = weight fraction of melt remaining. F was arbitrarily set at 0.9 for Figures 16 and 17.

eutectic point. The presence of zoned plagioclase goes against this conclusion. The plagioclase is thought to have formed at a very early stage just prior to the arrival of the melt at the eutectic point. The low abundance of zoned plagioclase did not noticeably influence the major element chemistry between the textural subdivisions.

Rare Earth Element Distribution and Partitioning

Rare earth element abundances are shown in Table 4. Unfortunately, no data is available for the fine grained alaskite.

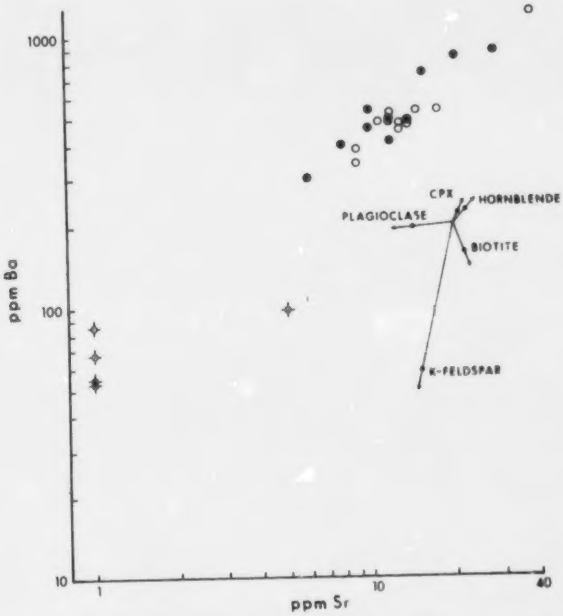


Figure 17. Ba versus Sr plot with vectors shown for Rayleigh fractional crystallization of single mineral phases, F=0.9. Symbols as for Figure 16.

Table 4. Concentrations of REE, Th and Hf.

Rock Type	aplite dyke		medium-grained alaskite		coarse-grained alaskite	Volcanic
Sample No.	47B	47C	47A	56	53	54B
ppm						
Ce	26.662	65.727	119.061	109.633	89.590	50.295
Nd	16.814	27.432	46.368	46.817	38.187	23.648
Sm	9.178	12.520	12.076	11.487	12.870	6.064
Eu	0.025	0.244	0.711	0.682	0.689	1.361
Tb	1.155	2.008	1.112	1.097	1.534	0.557
Yb	5.940	9.178	5.142	5.956	6.538	2.068
Lu	0.875	1.281	0.781	0.790	0.856	0.327
Th	18.931	18.159	12.586	15.511	13.389	5.776
Hf	4.317	5.339	5.082	6.159	0.973	3.366

Figure 18 illustrates the REE trends. The medium grained alaskite is enriched in the light REE while the aplite samples are relatively depleted. The single coarse grained alaskite sample is in between the two. For the coarse grained alaskite and aplite dykes, Sm is enriched relative to Nd. This is not the situation for the medium grained alaskite. All five samples of Figure 18 cluster close together at Sm. Very strong negative Eu anomalies are present, especially for the aplite dykes. In the heavy REE, both of the medium grained alaskite samples as well as one of the aplite samples are relatively depleted. The other aplite sample is enriched in the heavy REE while the coarse grained alaskite has the middle values.

The presence of allanite, fluorite and possibly monazite in the medium grained alaskite accounts for the high light REE values (Deer, Howie and Zussman, 1966). The later formed dykes and coarse grained alaskite are subsequently depleted even though they also contain allanite, fluorite and possibly monazite. Fractional crystallization of feldspar in the alaskite accounts for the low Eu content of the aplite. The heavy REE information is complicated by the fact that one of the aplite dykes has relatively high values and the other sample is found amongst the low values with the medium grained alaskite. The high heavy REE values in the one dyke go against the observation that zircon may be present. Since zircon has a high affinity for the heavy REE (Hanson, 1980), then the late phases of the pluton (i.e. aplite dykes) should be depleted in heavy REE. Fine grained zircon is often mistaken for monazite in optical studies of granitic rocks (Mittlefehldt and Miller, 1983) and is probably the case here.

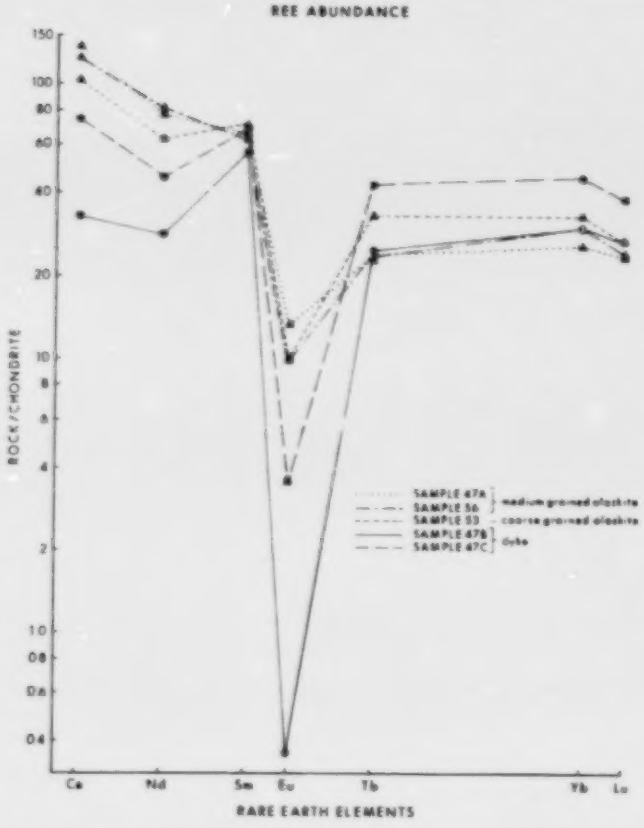


Figure 18. Chondrite normalized REE abundances in the Pattison Pluton.

The REE patterns for both dyke samples are the same except that all of the values for Sample 47C are shifted to lower amounts. Field observations show that 47C has been altered and the porosity of 47C is distinctly lower than 47B. Also, 47C has a high biotite content (15 to 20 percent fine grained biotite). It appears that a late fluid penetrated 47C and precipitated biotite. This lowered its porosity and diluted the stable REE values of 47C. The amplified Eu anomaly of 47C was possibly due to alteration and removal of feldspar which has a high affinity for Eu (Hanson, 1980). Parallel shifts in REE patterns for one rock unit is a common indicator of alteration (Campbell et al, 1982, Dostal and Strong, 1983). Chemical analysis indicates that the alteration fluid was possibly iron rich (Table 1). 47C and 47B are two parallel aplite dykes from the same outcrop. The alteration is peculiar in that it appears to be restricted to the one dyke, leaving the host rock unaffected.

If zircon is not present, then the heavy REE are enriched into the progressively later phases - the early medium grained alaskite with the low values, the late aplite dyke with the high value, and again, the coarse grained alaskite in between these.

Use of Experimental Data

Normative values for the alaskite and aplite (Tables 5 and 6) plot within the restricted area of the shaded box in the SiO_2 - $KAlSi_3O_8$ - $NaAlSi_3O_8$ diagram (Fig. 19). Again, the homogeneity of the Pattison Pluton is demonstrated. The shaded area is the eutectic point (or very near) for the alaskite. It corresponds to experimental eutectics from one to four kilobars with most values including the end member aplites closer to two kilobars. This system applies well to the alaskite since normative SiO_2 - $KAlSi_3O_8$ make up more than 95% of the rock.

At 2 kbar, biotite is the last phase to crystallize from a biotite granite only if the water content for the entire system is less than 1.2 weight percent (Maaloe and Wyllie, 1975). Thus, the water content for the Pattison Pluton must have been less than 1.2 weight percent (approximately).

Table 5. Normative values (weight percent) for the coarse grained alaskite and aplite dykes.

	COARSE GRAINED ALASKITE						APLITE DYKES		
SAMPLE NO	194	272	122	71 B	239	241	802	36	117
Q	35.331	31.289	34.316	32.144	33.207	30.552	32.992	32.856	33.230
C	0.120	0.213	0.184	0.250	0.178				
OR	27.541	31.324	28.181	29.979	30.352	30.017	25.184	26.056	26.157
AB	33.196	33.059	32.541	34.066	32.433	35.978	38.459	37.694	37.585
AN	1.503	1.778	2.531	1.405	2.113	1.323	0.629	0.111	0.650
DI						0.171	1.569	1.779	0.112
HY	0.900	0.731	0.685	0.680	0.631	0.585			0.944
WO							0.002	0.060	
MT	0.074		0.080	0.59	0.071	0.045	0.038	0.059	0.026
HT									
IL	-0.026	0.002	0.022	0.022		0.021	0.023	0.031	0.064
HM	1.244	1.307	1.479	1.356	1.014	1.294	1.158	1.365	1.231
AP		0.117							
PO	0.026								

Table 6. Normative values (weight percent) for the medium and fine grained alaskites.

	MEDIUM GRAINED ALASKITE								FINE GRAINED ALASKITE			
Sample No.	264	217	75	43	212	225	58	234	206	237	30	149
Q	30.799	31.167	29.245	31.261	32.139	31.980	31.518	32.435	31.959	32.677	30.988	33.203
C					0.123					0.377		
OR	29.367	29.413	29.449	30.114	29.364	28.936	29.535	28.709	29.380	29.581	30.076	28.950
AB	36.384	34.774	37.250	35.580	34.989	36.450	35.063	34.150	35.164	32.871	34.843	33.992
AN	0.910	2.020	1.222	1.357	1.699	0.481	1.504	1.884	1.569	2.063	2.163	1.584
DI	0.835	0.406	1.067			0.513		0.177	0.736		0.017	0.066
HY	0.250	0.588	0.323	0.056	0.836	0.899	0.780	0.705	0.360	0.530	0.970	0.758
WO												
MT	0.050	0.070	0.085		0.079	0.050	0.083	0.070	0.080		0.081	0.063
HT				0.304						0.090		
IL	0.002	0.033	-0.036	0.232	0.022	0.021	-0.085	0.022	0.022	0.173		0.017
HM	1.105	1.500	1.139	1.350	1.150	0.960	1.425	1.429	0.750	1.137	0.983	1.363
AP												
PO							0.030					0.020

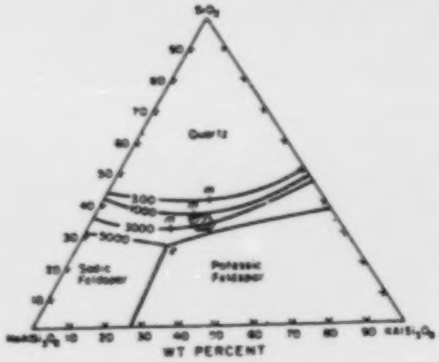


Figure 19. Phase diagrams showing boundary curves for water saturated liquids in equilibrium with quartz and alkali feldspar at indicated confining pressures (500, 1000, 3000, 5000 bars) (from White et al, 1981). Pattison Pluton values plot in the shaded area.

Experimental data from Burnham (1967) demonstrates that pegmatites at 2 kbar are saturated with respect to water only when the water content is 6.6 weight percent or greater. Water saturated textures are most evident in the medium grained alaskite (i.e. high abundance of large miarolitic cavities). For the alaskite to increase its water content from 1.2 weight percent to 6.6 weight percent, over 75 percent of the magma would have had to crystallize anhydrous phenocrysts. However, the medium grained alaskite contains no more than 30 percent phenocrysts. This indicates that much of the lower pluton had crystallized and/or fluid was migrating to, and concentrating in the top of the chamber. Higher concentrations of fluids in the upper zones would have depressed the melting temperature, allowing for further crystallization to occur from the bottom up.

Graphic and micrographic textures are extensively developed in the medium grained alaskite and moderately well developed in the coarse grained alaskite. Jahns and Burnham (1969) have shown that graphic textures are formed in water rich magmas in the presence of a separate aqueous fluid phase containing dissolved alkali chloride. It is also generally accepted that graphic intergrowths are formed under eutectic conditions (Cox, Bell, and Parkhurst, 1979, p. 301). Graphic textures involve the intergrowth of dendritic quartz with alkali feldspar (the latter filling in the interstices, Swanson , 1978). Most authors agree that the quartz and alkali feldspar crystallize simultaneously (Simpson, 1962, Fenn, 1979a, Shannon et al, 1982), but Swanson (1976) suggests that graphic textures in granites formed by the "initial growth of dendritic quartz followed by the crystallization of alkali feldspar." The formation of dendritic quartz proceeds at relatively low temperatures (Fenn, 1979b).

Besides the presence of a graphic groundmass, the high concentration of miarolitic cavities in the medium grained alaskite is further evidence of the high fluid content as well as the low pressure of this rock at one time in its evolution. The graphic and micrographic textures mantle, surround and use the feldspar phenocrysts as a substrate, indicating that they formed later than the phenocrysts. The irregular form of the miarolitic cavities indicates that they are a late feature as well.

DISCUSSION AND SYNTHESIS

Three principal crystallization stages were involved in the formation of the Pattison Pluton (Fig. 20):

A. Chilling of the fine grained alaskite.

B. Formation of feldspar phenocrysts from a relatively dry, biotite free, slow cooling melt.

C. Rapid cooling, fluid-rich stage characterized by graphic textures, miarolitic cavities and injection of aplite dykes.

Initially, the relatively dry alaskite magma intruded to high levels and was chilled along its upper surface to form the fine grained alaskite upper border phase. The early formed feldspars concentrated Ba and Sr. Rb was enriched into the melt.

Subsequently, the pluton was stationary and confining pressures remained constant. As the temperature dropped, anhydrous crystals began to form. Minor phases such as allanite and monazite (?) formed first in the upper cooler regions and concentrated the light REE. The residual melt became enriched in heavy REE and depleted in light REE. Ba, Rb, Sr and Eu information indicate that feldspars formed at approximately the same time in the upper and lower sections. With increased phenocryst production there came a rise in volatile pressure with the volatiles migrating and concentrating near the top of the chamber where the melting temperature was depressed. Further crystallization occurred from the bottom up.

Late in the crystallization history, vapour pressure exceeded confining pressures. This caused retrograde boiling and the formation of irregularly shaped bubbles, later to become the miarolitic cavities. Retrograde boiling greatly reduced the temperature within the pluton (Evans, 1980, p. 125). The combination of a separate fluid phase with the lowered temperature allowed for the formation of the graphic groundmass. The graphic groundmass was developed to an extensive degree in the medium grained alaskite where much residual melt was still available and to a lesser degree in the coarse grained alaskite where most of the melt had already crystallized and the water content was lower. At this point, there was also failure of the surrounding rocks causing vertical extension of the body. The extension created sets of flat lying open gaps. Pressure gradients gave rise to injection of volatiles and residual magma into the openings to form the aplite dykes, leaving behind a more porous alaskite. The more mobile volatiles would have been the first to race through the openings, effecting volatile transfer (Cox, Bill and Parkhurst, 1979, p. 8) and precipitating hornblende, as well as medium to coarse grained graphic quartz and feldspar as shingle-like aggregates perpendicular to the hot walls of the openings. The ensuing intrusion of dryer melt by filter pressing, chilled and formed the aplite. In some localized areas, the extension was at least five percent. This is demonstrated in the castellated outcrops which may have 0.5 meters of dyke thickness for every 10 meters of alaskite. Movement

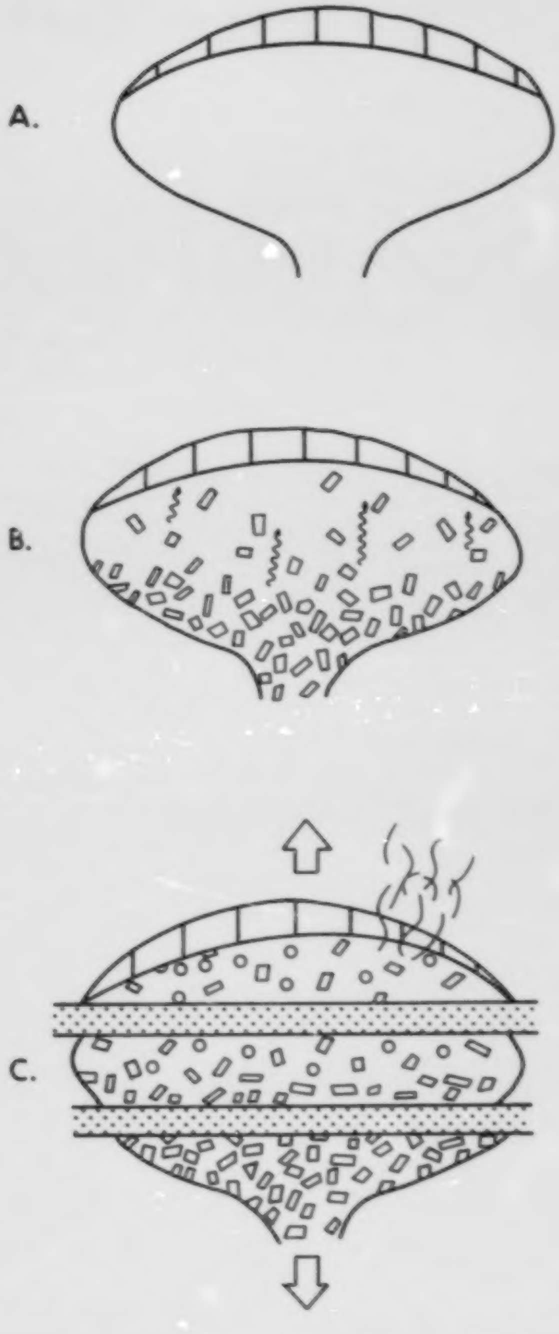


Figure 20. Cartoon representation of the evolution model for the Pattison Pluton.

A. Initial rapid chilling of the upper border phase.

B. Concentration of volatiles at the top of the Pluton, buildup of volatile pressure, and formation of the lower coarse-grained alaskite.

C. Vertical extension, lateral injection of aplite dykes, formation of miarolitic cavities and the graphic groundmass as well as quartz veining with molybdenum mineralization.

of the crystal mush likely caused the strain features found in the mineral phases of the alaskite. These features are not present in the minerals of the aplite dykes.

Retrograde boiling, failure and brecciation of surrounding rocks, vertical extension, formation of the graphic groundmass, straining of the minerals, intrusion of aplite dykes and injection of molybdenum bearing quartz veins are all thought to have occured approximately simultaneously towards the end of the Pattison Pluton's evolution.

Similar mineralogy and textures are present in the Tertiary alaskites of the Aishihik Lake map area (Ridgeway, 1973).

Acknowledgements

This project was funded by the Exploration and Geological Services Division, Whitehorse, Yukon. I am grateful to Dr. J.A. Morin, for initiating the project and supplying me with the perfect thesis topic. Many thanks go to staff geologist Pat Watson, who efficiently organized and led in the field work. I am greatly indebted to Dr. Calvin Pride, University of Ottawa, who supervised this work and was very generous with his time at school as well as in having visited us in the field. I would also like to acknowledge Ron Hartree and Jean Lafleur for their tutoring in the X-ray laboratory.

LIST OF REFERENCES

ARTH, J.G., HANSON, G.H. 1975. Geochemistry and origin of the early Precambrian crust of Northeastern Minnesota; Geochimica et Cosmochimica Acta, Vol. 39, pp. 325-362.

BURNHAM, C.W. 1967. Hydrothermal fluids at the magmatic stage. In: H.L. Barnes (editor), Geochemistry of Hydrothermal Ore Deposits; Holt, Rinehart and Winston, Inc., Montreal, 670 p.

CAMPBELL, I.H., GOAD, P., FRANKLIN, J.M., GORTON, M.P., HART, T.R., SOWA, J., THURSTON, P.C. 1982. Grant 80: Rare earth elements in felsic volcanic rocks associated with Cu-Zn massive sulphide mineralization. In: E.G. Pye (editor), Ont. Geol. Survey Misc. Paper 103, pp. 20-28.

COX, K.G., BELL, J.D., PARKHURST, R.J. 1979. The Interpretation of Igneous Rocks; George Allen and Unwin, Boston, 450 p.

DEER, W.A., HOWIE, R.A., ZUSSMAN, J., 1966. An Introduction to the Rock Forming Minerals; Longman Group Ltd., London, 528 p.

DOSTAL, J., STRONG, D.F. 1983. Trace-element mobility during low-grade metamorphism and silicification of basaltic rocks from Saint John, New Brunswick; Can. J. Earth Sciences Vol. 20, pp. 431-435.

EVANS, A.M. 1980. An Introduction to Ore Geology; Elsevier, New York, 321 p.

FENN, P.M. 1979a. On the origin of graphic intergrowths; Geological Society of America, Abstracts with Programs, Vol. 11, p. 424.

FENN, P.M. 1979b. Experimental crystallization of Harding, New Mexico pegmatite; Geological Society of America Abstracts with Programs, Vol. 11, p. 77.

HANSON, G.N. 1980. Rare earth elements in petrogenetic studies of igneous systems; Ann. Rev. Earth Planet. Sci., Vol. 8, pp. 371-406.

JAHNS, R.H., BURNHAM, C.W. 1969. Experimental studies of pegmatite genesis: I. A model for the derivation of crystallization of granitic pegmatites; Economic Geology, Vol. 64, pp. 843-864.

LYNCH, G.V. 1983. Petrology and Geochemistry of the High Level Alaskitic Pattison Pluton, Snag Map Area, Yukon; B.Sc. thesis, University of Ottawa, 87 p.

MAALOE, S., WYLLIE, P.J. 1975. Water content of a granite magma deduced from the sequence of crystallization determined experimentally with water undersaturated conditions; Contr. Mineral. Petrol., Vol. 52, pp. 175-191.

MAHOOD, G., HILDRETH, W. 1983. Large partition coefficients for trace elements in high-silica rhyolites; Geochimica et Cosmochimica Acta, Vol. 47, pp. 11-30.

MITTLEFEHLDT, D.W., MILLER, C.F. 1983. Geochemistry of the Sweetwater Wash Pluton, California: implications for "anomalous" trace element behavior during differentiation of felsic magmas; Geochimica et Cosmochimica Acta, Vol. 47, pp. 109-124.

RIDGEWAY, W.R. 1973. The Petrology of Nisling and Ruby Range Volcanic and Plutonic Rocks, Yukon Territory; B.Sc. thesis, University of British Columbia, Vancouver, B.C., 49 p.

SHANNON, J.R., WALKER, B.M., CARTEN, R.B., GERAGHTY, E.P. 1982. Unidirectional solidification textures and their significance in determining relative ages of intrusions at the Henderson Mine, Colorado; Geology, Vol. 10, pp. 293-297.

SIMPSON, D.R. 1962. Graphic granite from the Ramona Pegmatite District, California; American Mineralogist, Vol. 47, pp. 1123-1137.

STRECKEISEN, A. 1976. To each plutonic rock its proper name; Earth Science Reviews, Vol. 12, pp. 1-33.

SWANSON, S.E. 1976. Growth of quartz crystals from silicate melts and the origin of the graphic granite texture (abs.); EOS (American Geophysical Union Transactions), Vol. 57, p. 340.

SWANSON, S.E. 1978. Snowflake-like quartz, McKinney Mine, North Carolina - Evidence of rapid crystallization; Geological Society of America Abstracts with Programs, Vol. 10, p. 198.

TEMPELMAN-KLUIT, D.J. 1974. Reconnaissance geology of Aishihik Lake, Snag and part of Stewart River map areas, west-central Yukon; Geol. Surv. Can., Paper 73-41, 97 p.

TEMPELMAN-KLUIT, D.J. 1981. Geology and mineral deposits of southern Yukon. In: Yukon Geology and Exploration, 1979-80; Department of Indian and Northern Affairs, 1981, Whitehorse, pp. 7-31.

TINDLE, A.G., PEARCE, A.P. 1981. Petrogenetic modelling of in-situ fractional crystallization in the zoned Loch Doon Pluton, Scotland; Contributions to Mineralogy and Petrology, Vol. 78, pp. 196-207.

WHITE, W.H., BOOKSTROM, A.A., KAMILLI, R.J., GANSTER, M.W., SMITH, R.P., RANTA, P.E., STEININGER, R.C. 1981. Character and origin of Climax-type molybdenum deposits. In: B.J. Skinner (editor), Economic Geology Seventy-Fifth Anniversary Volume, 1905-1980, pp. 270-316.

A SEDIMENTOLOGIC DESCRIPTION
OF CLEAR CREEK FLUVIATILE SEDIMENTS
115 P, CENTRAL YUKON

by

S.R. Morison
Exploration and Geological Services Division
Whitehorse, Yukon

Introduction

Clear Creek drainage basin (see Figure 1) contains fluviatile gravels which have been explored and mined for placer gold since the early 1900's. Access is largely by road, and there were four mining operations and two exploration programs in the basin during the mining season of 1982. This paper briefly describes the various fluvial sediments in Clear Creek drainage basin, interprets the described facies, and outlines the fluvial environment which influences the distribution of placer gold in Clear Creek gravels. The author would like to thank the placer miners on Clear Creek for their hospitality and for access to both their properties and gold.

General Geology

McQuesten map sheet (115 P) has been mapped by Bostock (1964) at a scale of 1:250,000 (see Figure 2). Clear Creek drainage basin is characterized by Late PreCambrian(?) metasedimentary rocks, and a Cretaceous granitic intrusion. Late Tertiary (Pliocene?) outcrops of fine and coarse clastics can also be found in the Tintina valley, and it is of interest to note that Bostock (1964) mapped an outcrop of White Channel Gravel (Unit 19A) which has been mined for placer gold (see Figure 2). Altered and crumbly schistose and granitic bedrock is generally associated with and below the Late Tertiary clastic deposits, and appears to be similar to the bedrock alteration described by Tempelman-Kluit (D.I.A.N.D., 1982) in the Klondike area. It is also of interest to note that some Late Tertiary clastic exposures described by the author appear to be largely reworked granitic gruss with distinct planar stratification, which implies pre-Pliocene(?) alteration of the Cretaceous intrusion. Figure 2 illustrates that Clear Creek drainage basin is beyond the Reid glacial limit as defined by Bostock (1966), and Hughes et al (1969). Glacial drift within the Reid limit is thought to represent an early Wisconsin Cordilleran ice advance (Hughes et al, 1969), and consequently glacial drift within Clear Creek drainage basin probably represents an older advance (i.e. pre-Wisconsin?) which has been outlined by the pre-Reid glacial limit (see Figure 2, after Hughes et al 1969). It should be noted however, that immediately south of Belleview Point (see Figure 2), the author has mapped an outcrop of diamicton (Reid till?) which directly overlies pre-Reid sand and gravel. Pre-Reid glacial deposits in Clear Creek basin include till, resedimented till sequences, and glaciofluvial sediments. Other surficial materials include colluvial veneers and blankets, debris and sediment flow deposits, and alluvial fans, terraces, and plains.

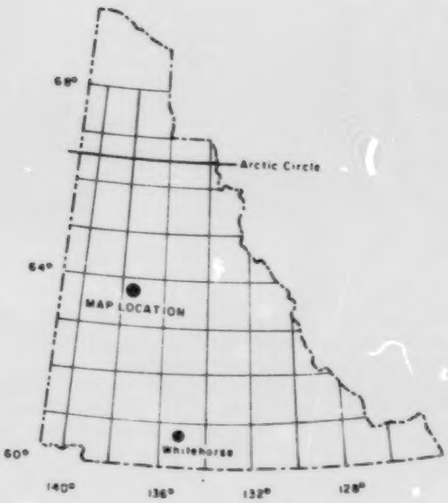


Figure 1. Location map for Clear Creek.

Quaternary History

Clear Creek drainage basin contained a substantial thickness of both Late Tertiary (Pliocene?) clastic and pre-Reid glacial deposits. During the Wisconsin glacial interval, fluvial erosion and downcutting through these thick clastic deposits and into competent bedrock occurred. Clear Creek reached base level, and was progressively widened through lateral stream erosion. The valley bottom gravelly facies largely represents the widening and lateral erosion of Clear Creek valley in competent bedrock. These gravels have been radiocarbon dated at 6230± 80 years and it is important to understand that the associated placer minerals represent a concentration process which occurred during the Wisconsin glacial interval. The concentration process and gravelly sedimentation ended during the late Holocene, at which time the fluvial regime of Clear Creek changed dramatically. The tributaries to Clear Creek (i.e. Zinc Creek, Barlow Creek, and Squaw Creek) were also eroded by fluvial downcutting during the Wisconsin glacial interval, and the present day V-shaped, incised drainage is the result.

Valley Bottom Fluvial Sediments: Lithofacies Description and Interpretation

Seven distinct sedimentary facies have been assigned to Clear Creek fluviatile deposits.

The silty facies has two members F,lc and F,tc (see Figure 3). Facies F,lc is characterized by sediment which is generally silt to fine sand, with occasional pockets and stratifications of coarser clastics (i.e. coarse sand to grit). It is dominantly laminated, and may be wavy parallel, even parallel,

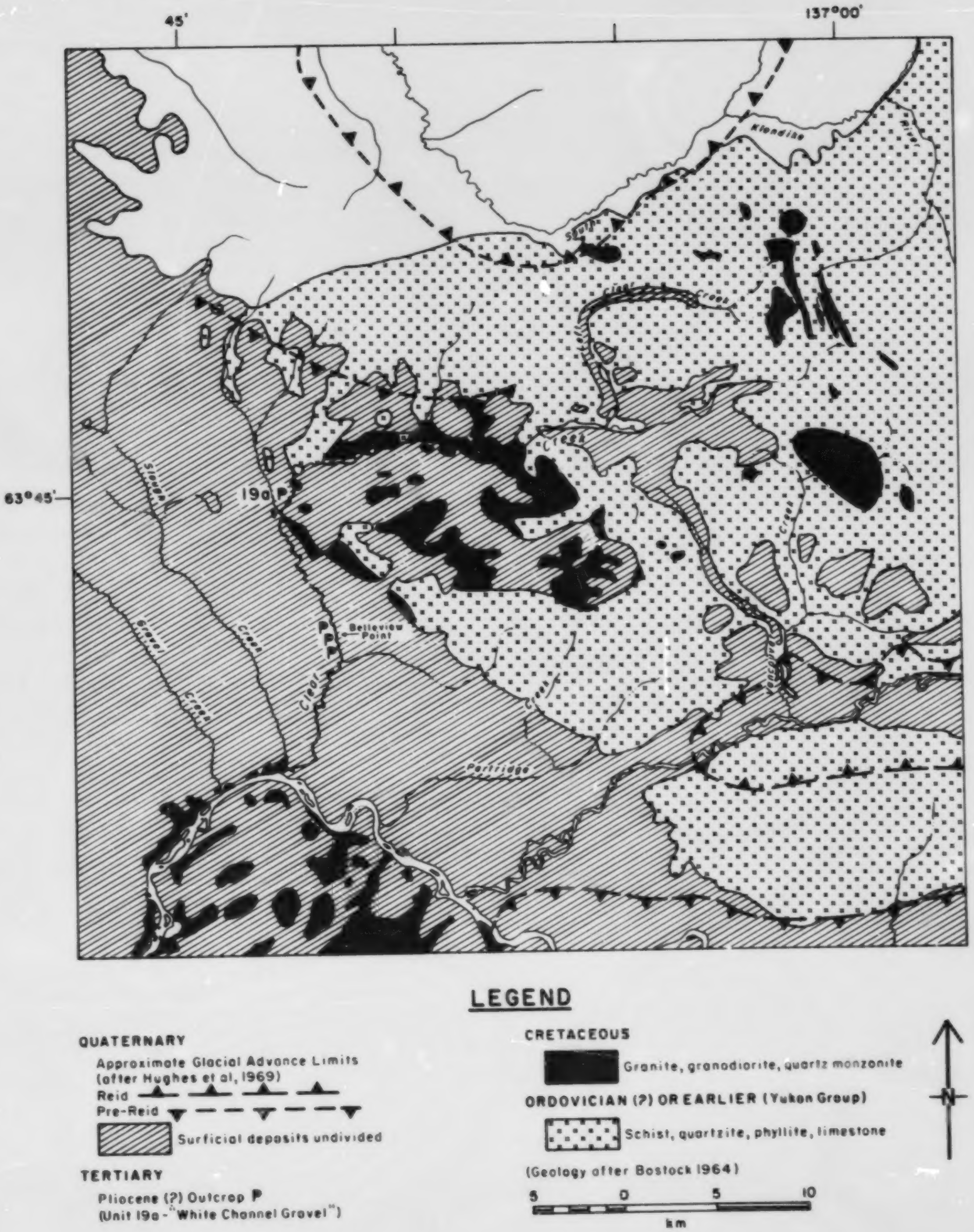
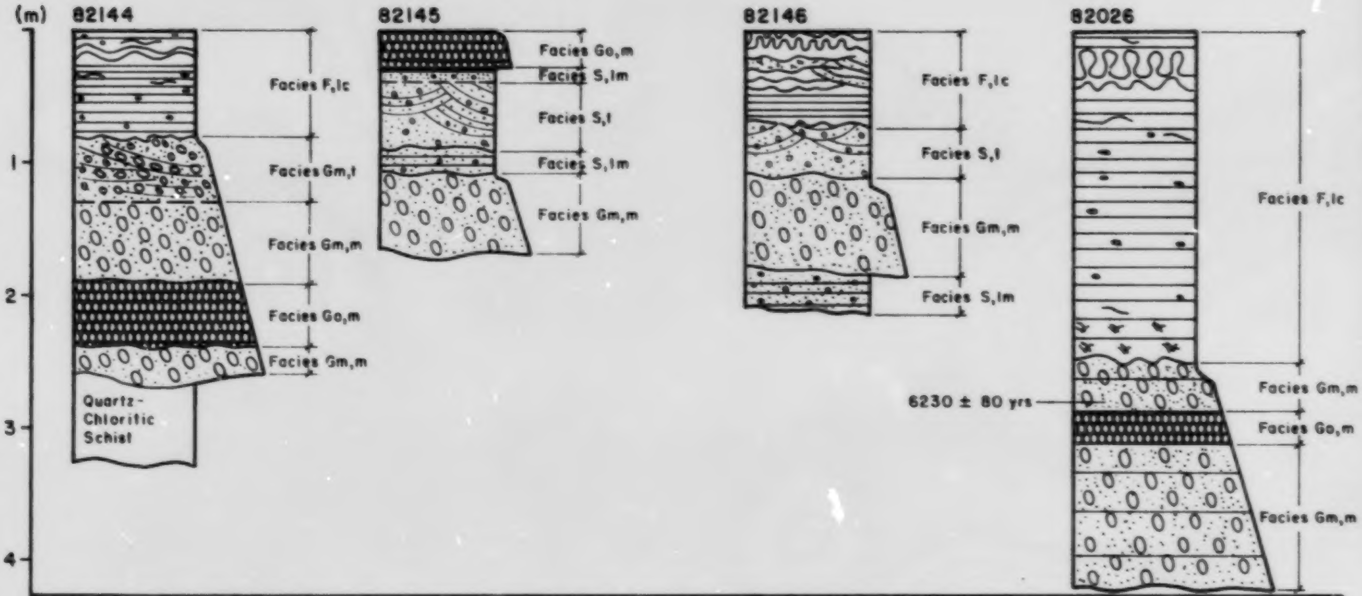

45'
137°00'
63°45'
Klondike
River
South
Clear
Creek
Creek
Sloan
19a P
Bellevue Point
Gravel
Creek
Clear
Creek
Creek
Partridge
LEGEND
QUATERNARY
Approximate Glacial Advance Limits (after Hughes et al, 1969)
Reid
Pre-Reid
Surficial deposits undivided
TERTIARY
Pliocene (?) Outcrop P
(Unit 19a - "White Channel Gravel")
CRETACEOUS
Granite, granodiorite, quartz monzonite
ORDOVICIAN (?) OR EARLIER (Yukon Group)
Schist, quartzite, phyllite, limestone
(Geology after Bostock 1964)
5
0
5
10
km
N

Figure 2. General Geology and Glacial Limits of Clear Creek Area.



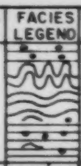
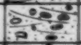
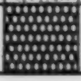
GENERAL FACIES	FACIES CODE	FACIES LEGEND	LITHOFACIES DESCRIPTION	SEDIMENTARY STRUCTURES	INTERPRETATION AND REMARKS
Silty Facies	F,lc		silt, fine sand, discontinuous clay laminae, scattered coarse sand and pebbles.	laminated to bedded, discontinuous wavy parallel laminae, convoluted and disrupted laminae and beds, mud drapes at base of beds.	overbank environment coupled with channel abandoment and liquefaction processes during subaerial exposure; abundant wood debris, humic pockets and bands, and peat, oxidized lenses and thin bands throughout.
	F,tc		silt, fine sand, and pebbly coarse sand.	trough cross stratification, discontinuous wavy parallel laminae, convoluted and disrupted laminae.	overbank environment with stage increase and resutant scour and fill; coarser clastic fill in channels, abundant wood debris, humic pockets and bands, and peat.
Sandy Facies	S,lm		pebbly sand, occassional silt (discontinuous)	massive to laminated.	planar bed flow and/or channel fill; wood debris, and humic pockets; oxidized bands.
	S,t		sand with scattered pebbles.	trough cross stratification.	sandy dune migration
Gravelly Facies	Gm,t		clast supported matrix filled gravel.	trough cross stratification	either laterally migrating channels with scour and fill or down-stream migration of gravelly dunes.
	Gm,m		clast supported, matrix filled gravel.	massive to crudely stratified	aggrading diffuse gravel sheets, or poorly developed proximal bar forms; oxidized bands, wood debris
	Go,m		clast supported openwork gravel.	massive, occassionally imbricate, pockets and lenses.	channel lag (finer clastics in suspension); oxidized gravel bands and black stained pockets.

Figure 3. Sedimentary facies for Clear Creek fluviatile deposits. Note the vertical sequences of mapped exposures, and the radiocarbon date in column 82026.

convoluted, or disrupted (see Figure 3). Mud drapes are seen at the base of this facies, and significant peat accumulation and wood debris is common. The interpretation of F,lc involves channel abandonment coupled with deposition of finer clastics, and organic landform establishment. Liquefaction processes in association with overloading or deformation through shear action from low current velocities during channel abandonment are probably responsible for the convoluted and disrupted stratification in this facies (Reineck and Singh 1975, p. 79).

Facies F,tc, is similar to F,lc except for the added structure of scour troughs associated with stratified coarser clastic fill (see Figure 3). This facies represents minor channel development with resulting scour and fill associated with fluctuating discharge levels.

The sandy facies, S,lm is a pebbly sand unit with occasional silty interlaminae (see Figure 3). The sedimentary structures range from massive to laminated, and the facies is thought to represent massive scour fill or planar bed flow.

The facies S,t has similar textures and characteristics to S,lm but is trough cross-stratified (see Figure 3), with sandy dune migration likely responsible for the above structure.

In the coarse grained gravelly facies, Gm,m is a clast supported, moderately to poorly sorted, matrix filled gravel (see Figure 3). There are also discontinuous sandy beds, oxidized gravelly bands, and wood debris (although not common) throughout this facies. Sedimentary structures range from massive to crudely stratified. Facies Gm,m is thought to represent aggrading diffuse gravel sheets, or proximal bar forms (Hein and Walker 1977). Hein and Walker (1977) describe diffuse gravel sheets as low relief channel features which are a few pebble diameters in thickness, submerged, and move only during peak discharge intervals. These morphologic features cover the majority of the channel width and in an aggrading proximal environment massive to crudely stratified, poorly sorted gravels would be the result (Hein and Walker, 1977). The stratification is due to fluctuating discharge levels with the tendency of finer sediment to be deposited during lower discharge intervals (Hein and Walker, 1977). Emergent proximal bar forms result from aggradation of channel gravels, and internally these features are poorly sorted, and massive to crudely stratified with poor development of foresets in the proximal environment (Hein and Walker, 1977). It is very difficult to distinguish these types of unit bars from preserved gravel deposits. As foresets are distinctly lacking in the facies Gm,m it is reasonable to conclude that diagonal and/or longitudinal unit bars were developed, and the thicker (i.e. greater than 1.0 m), distinctly stratified gravelly deposits which contain scattered wood debris probably represent the above bar forms. The thinner (i.e. less than 1.0 m) massive to crudely stratified gravelly deposits in this facies probably represent aggraded diffuse sheets.

The last gravelly facies Go,m is a clast supported, openwork gravel which is massive, occasionally imbricate, and can also occur in discrete pockets and lenses. This facies is interpreted as channel or lag gravels which have been deposited under higher discharge conditions (i.e. finer clastics held in suspension), or diffuse gravel sheets which have been winnowed as a result of increased discharge levels. The discrete pockets of openwork gravels are commonly stained black (manganese coatings?), and are due to winnowing by a perched water table on the valley floor.

Fluvial Environment - A Synthesis

The environment of deposition which relates to the gravelly facies does not represent the modern Clear Creek fluvial system. The distribution of detrital gold bears a relationship to the hydraulic action associated with the deposition of the gravelly facies. The physical characteristics and interpretations of the gravelly facies infers high, fluctuating, discharge levels. The overall fluvial environment appears to resemble a braided system with facies which should be found in upstream and downstream reach locations. The characteristics of this braided system are:

1. Downstream braided sequences with laterally migrating anastomosing channels and vertically aggrading unit bars as illustrated in Figure 4, (Hein and Walker, 1977). The gravelly facies Gm,m in the form of aggraded unit bar sequences and/or diffuse gravel sheets with the sandy facies (i.e. S,lm and S,t) in association with both channel and bar sedimentation should represent the above system.
2. Upstream pseudo-braided sequences, with few major channels, downstream migration of channel sediments (i.e. gravelly dunes), some vertical aggradation of diffuse gravel sheets, and minimal unit bar development (see Figure 4). All of the gravelly facies would associate with this high gradient and high discharge environment.

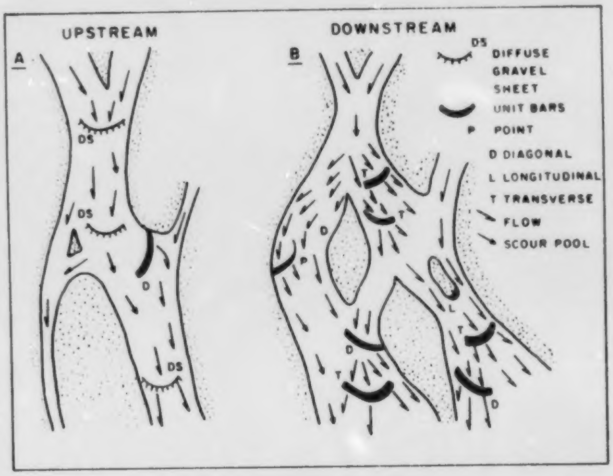


Figure 4. Characteristics of upstream and downstream reaches of a gravelly, braided river (from Hein and Walker, 1977).

The distribution of placer gold in the gravelly sediments is discontinuous and sporadic Smith and Minter (1980) comment on the variability and transitory nature of braided systems. They indicate that any heavy mineral concentrate can be thought of as local point sources, which can either be reworked and redeposited as a higher concentrate, or distributed randomly throughout the alluvial sediments depending upon the change in flow regime. The variability in terms of flow regime associated with the deposition of Clear Creek gravel (as the facies indicate) will lead to random, dispersed pockets of detrital gold concentration.

The multi-channel nature associated with the interpreted environment for Clear Creek gravel also implies discontinuous, concentrations of detrital gold. Finally, the interpreted aggraded gravelly sediments will contain concentrations of placer gold throughout, therefore a pay streak on a bedrock surface does not apply with Clear Creek gravel deposits.

References Cited

BOSTOCK, H.S., 1964. Geology, McQuesten River, Yukon Territory, Geol. Surv. Can., Map 1143A.

BOSTOCK, H.S., 1966. Notes on glaciation in central Yukon Territory, Geol. Surv. Can., Paper 65-36

HEIN, F.J. and WALKER, R.G., 1977. Bar evolution and development of stratification in the gravelly, braided, Kicking Horse River, British Columbia, Can. J. Earth Sci., V. 14, p. 562-570.

HUGHES, O.L., CAMPBELL, R.B., MULLER, J.E., and WHEELER, J.O., 1969. Glacial limits and flows patterns, Yukon Territory, south of 65 degrees north latitude, Geolog. Surv. Can., Paper 68-34.

REINECK, H.E. and SINGH, I.B., 1975. Depositional Sedimentary Environments, Springer-Verlag, p. 430.

SMITH, N.D. and MINTER, W.E.L., 1980. Sedimentological controls of Gold and Uranium in two Witwatersrand Paleoplacers, Econ. Geol. V. 75, p. 1-14.

TEMPELMAN-KLUIT, D.J., 1982. White Channel Gravel of the Klondike, Yukon Geology and Exploration 1981 D.I.A.N.D. Geology Section Pub., Whitehorse, p. 74-79.

PROTEROZOIC AND EARLY PALEOZOIC VOLCANISM IN THE OGILVIE MOUNTAINS:
An example from Mount Harper, west-central Yukon

By
C.F. Roots and John M. Moore, Jr.
Ottawa-Carleton Centre for Geoscience Studies
Ottawa, Ontario
K1S 5B6

INTRODUCTION

Volcanic rocks in the Dawson map-area (116 B and C) are under study as a supplement to the stratigraphic and structurally oriented G.S.C. Ogilvie Mountains project (Thompson and Roots, 1982). They occur as isolated lenses within the early Paleozoic Selwyn Basin assemblage and as sets of flows and complexes within Proterozoic carbonate rocks near the edge of the Mackenzie Platform (Figure 1). Mount Harper complex, an example of the latter group, has been studied in greater detail than the others because it is more completely exposed, and contains two mafic to felsic volcanic cycles.

This report, based on two field mapping seasons, has two parts. Characteristics of the two volcanic groups and correlative occurrences are discussed in the first part; the second presents interpretations from the stratigraphy of the Mount Harper complex as an illustration of the style of volcanism in the region.

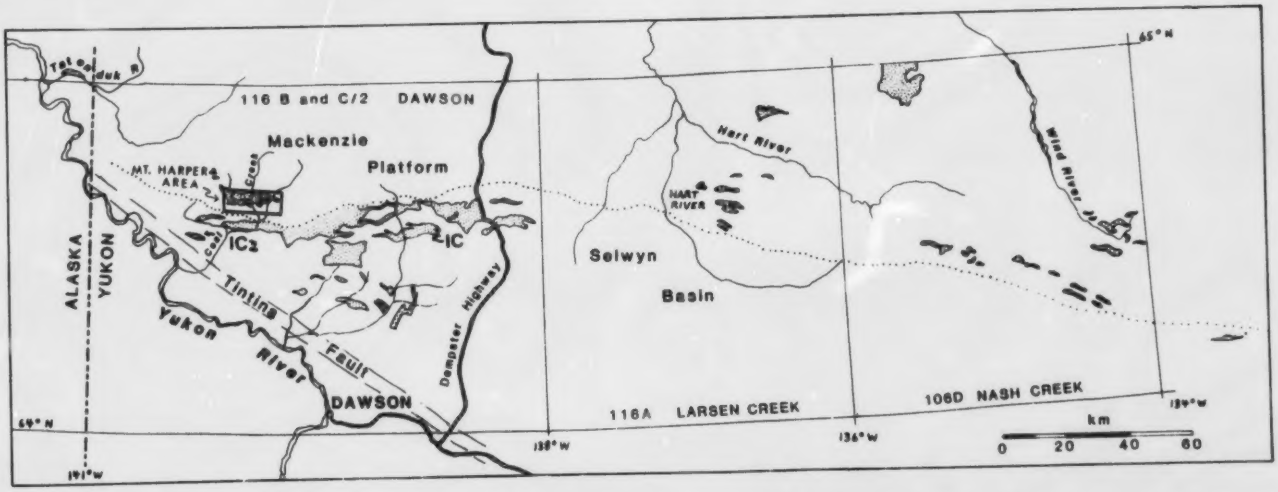


Figure 1. Distribution of volcanic rocks on the Mackenzie Platform (north of dotted line) and within the Selwyn Basin tectonic elements of the Ogilvie Mountains. 'IC' indicates localities thought to be older than most volcanic occurrences within the 'off-shelf' assemblage.

ACKNOWLEDGEMENTS

The Mount Harper complex forms the subject of a Ph.D thesis by Roots, currently in progress at Carleton University in Ottawa. Field work was supported by the Geological Survey of Canada; funds from the Department of Indian and Northern Affairs enabled thesis supervisor Moore to visit the area. Staff of the Exploration and Geological Services Division in Whitehorse offered sound advice and encouragement on many occasions.

REGIONAL CORRELATIONS

Unlike the sedimentary rocks, whose correlation with established units in the Wernecke Mountains and Alaska is now well advanced, understanding of the stratigraphic position and internal relations of the volcanic piles is less definite. Most belts of volcanic rocks were outlined by Green (1972; Unit 4 and 4a), several have been intensively prospected, but examination of the structure and stratigraphic detail within them has only begun.

In the 'off-shelf' assemblage (northwest extremity of the Selwyn Basin), lenticular accumulations of predominantly mafic flows and breccias are interbedded with mudstones and phyllitic shales of the Road River Formation. Limestone breccia pods that occur within the volcanics west of the Dempster Highway yield brachiopod fragments and agglutinated foraminifera of lower to middle Ordovician age (pers. comm. M.J. Orchard and M.P. Cecile). The volcanic flows and their textures resemble descriptions from the alkalic Marmot Formation in the Misty Creek Embayment (Cecile, 1982) 500 km to the east. In the Dawson map-area however, incomplete mapping of the isoclinal folds, thrust faults and abrupt facies changes hamper attempts to match separated outcrops of

Yukon Exploration and Geology 1982, p. 55-62

the Ordovician rocks, and it is unclear whether the volcanics once formed an areally extensive sheet or are numerous local accumulations of various ages. Some exposures contain elongate masses of pillow lavas and peperite (vesicular lapillistone) stacked within extensive volcanic siltstone that can be interpreted as localized fissure extrusions.

Several volcanic outcrops in the 'off-shelf' assemblage ('1C' on Figure 1) are associated with maroon argillite which regionally contains *Oldhamia* trace fossils, indicating a possible age as old as middle Cambrian. Serpentine-green rather than grey weathering hues are shown by these pillowed flows and sheared breccias that may be older than the other volcanic piles in the 'off-shelf' assemblage. The age relationship of these possibly older lavas to those atop the Proterozoic dolostone platform has not been established. In the western part of Dawson map-area, similar volcanic rocks underlie the Shell Creek Iron Formation (Green, 1972, p. 143, and Anaconda Canada Exploration Company geologists, pers. comm.) suggesting that it may be of the volcanic exhalative type.

Within the 'shelf' assemblage (Mackenzie Platform in the Ogilvie and Wernecke Mountains), volcanic piles formed at various times in different places (cf. Bell, 1982); no absolute ages are known. Mount Harper complex is the largest, covering 105 km^2. Other occurrences are located to the east, in Larsen Creek (116 A) and Nash Creek (106 D) map-areas, and within the Tindir Group in Alaska (Figure 1). Those near the Platform margin in Nash Creek map-area may be equivalent to the Mount Harper complex because they are overlain by a similar massive, lower Cambrian dolostone unit. To the north, also in this map-area, feldspar-phyric andesite flows are intercalated with fossiliferous sandstone and conglomerate. Green(1972, p.24) mapped the flows as Unit 5, of lower Cambrian age, and noted that they overlie older units with marked unconformity. Similarly, the volcanic flows at Mount Harper disconformably overlie older dolostone or rest on boulder conglomerate. That the platform volcanic piles overlie significant breaks in the shelf sedimentary record may be important, as will be discussed later.

The igneous rocks in the Hart River drainage consist primarily of thick diabasic sills and dykes that Green (1972) grouped with Cretaceous intrusions, but are probably Proterozoic. Pillowed flows are well exposed near the Hart River prospect. Diabasic dykes also occur in the older Proterozoic units in the Dawson map-area; they may have been feeders to late Proterozoic or early Cambrian volcanism, and may be evidence for extension in this part of the Mackenzie Platform.

MOUNT HARPER VOLCANIC COMPLEX

Mount Harper (1875 m) is a prominent dark peak which contrasts with the surrounding light-coloured dolostone ranges. The steep-walled valleys of Coal Creek and a tributary expose up to 1200 m of layered rocks constituting the erosional remnant of a long-lived, compositionally variable volcanic centre. The term 'volcanic complex' as used here denotes the present outcrop, that is, the remains of several superimposed ancient volcanoes. The lateral extent of the original edifice is unknown because the upper members are exposed only on a few ridge crests.

The complex has been divided into three successions of mafic rocks (members 'a', 'c' and 'e') separated by two, less voluminous felsic intervals ('b' and 'd'), outlined in Roots (1983). Within each member, various rock types, such as scoriaceous flows and lapilli, or hyaloclastite breccias, are referred to as facies, and commonly reflect different depositional environments.

This interpretation considers three stages in the evolution of the volcanic edifice. In stage I, pillowed flows and breccias (member 'a') built a broad, subaqueous shield volcano. When the volcanic pile intermittently rose above the sea (stage II), the four facies of member 'c' record subaerial, transitional and underwater depositional environments. Felsic volcanism (member 'd') and epicalstic sedimentation (Stage III) indicate major subsidence of the mature edifice. This discussion emphasizes environment interpretation; description of the stratigraphic members is included in Roots (1982, 1983).

Stage I: Early Subaqueous Volcanism

Earliest lava flows (member 'a') that overran shallow water dolostone reefs and slopes may have been extruded in deeper water along normal faults. Faulting immediately prior to volcanism is indicated by the distribution of boulder conglomerate and a throw of several hundred metres of the older stratigraphy in ranges east of Mount Harper. Along the southeast margin of the complex, lava flows rest directly upon older dolostone units; to the north, (interpreted as the down-dropped side),an intervening conglomerate reaches up to 100 m in thickness (Figure 2).

Member 'a' is dominated by close-fitting pillows best exposed in loose cliffs along the lower valley walls. Tops of the cliff-forming rocks within the succession form remnants of an extensive, shallow-dipping paleosurface, suggestive of a shield-like volcanic edifice (Figure 3). The pillows are metre-wide, bulbous protrusions of lava tubes tens of metres long. Their shapes in outcrop depend upon the orientation of the exposure relative to the ancient flow direction, being thin and worm-like in lengthwise sections or forming a profusion of hemispheres when cut across the flow. The most useful structural measurement, therefore, is a vector of flow propagation (see Figure 2), from which probable vent location and paleotopography may be inferred. Generally, three-dimensional exposures of pillows yield this information, but flow directions can also be approximated by studying the sequence of emplacement of individual pillows in a two dimensional, vertical section. Dips measured on pillow outcrops are misleading because lavas freeze on moderate slopes, and their attitudes may have been altered by subsidence or doming of the volcanic pile. Abrupt discordances in original slope angle between successive flows represent overlapping of lava streams from local topographic highs.

On steeper slopes, pillows break off and tumble down (paleoslope angles greater than 25 to 35 degrees, depending upon lava fluidity and flow rate), forming two breccia textures common in the subaqueous stages of the volcano. 'Flow-foot breccia' (Jones and Nelson, 1970 and many others) here appears as trains of teardrop and amoeboid pillows in chloritic 'ash'

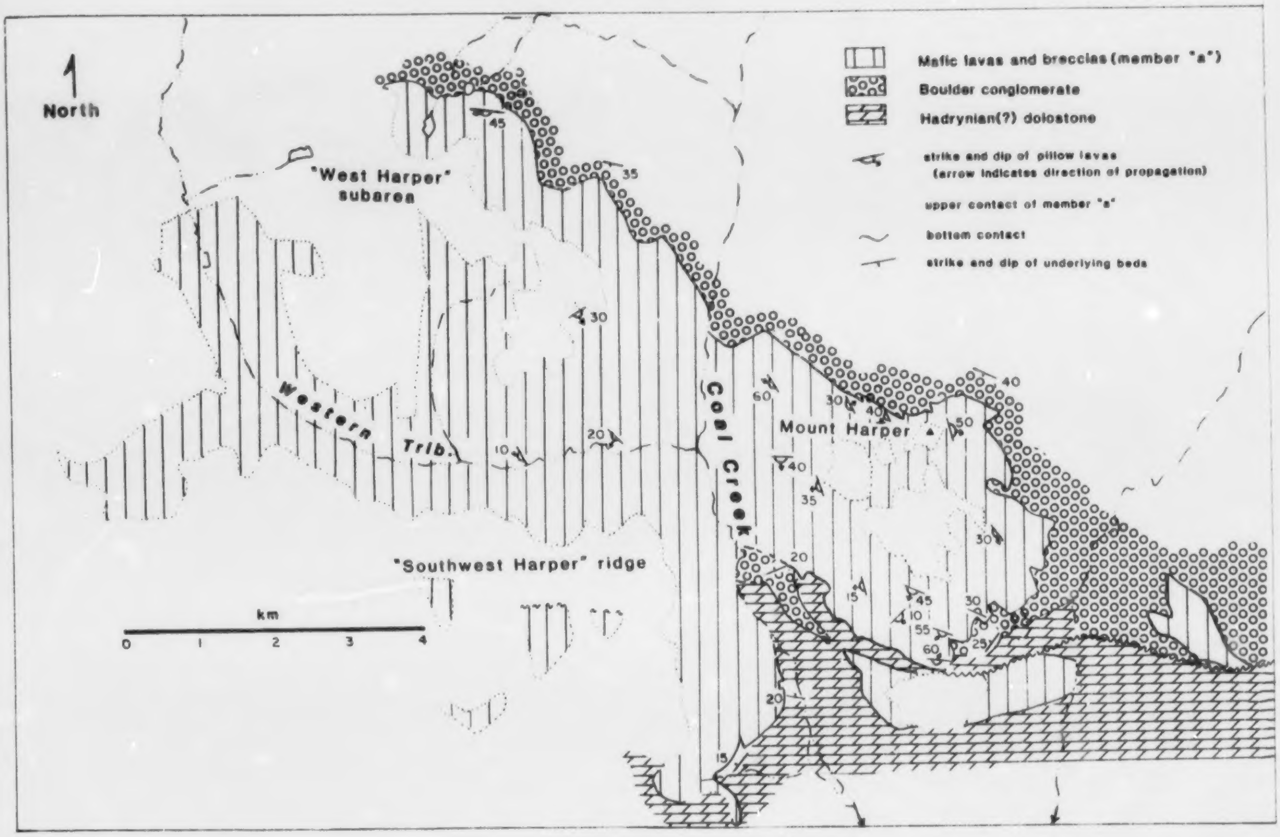

North
Mafic lavas and breccias (member "a")
Boulder conglomerate
Hadrynian(?) dolostone
strike and dip of pillow lavas (arrow indicates direction of propagation)
upper contact of member "a"
bottom contact
strike and dip of underlying beds
"West Harper" subarea
Western Trib.
Coal Creek
Mount Harper
"Southwest Harper" ridge
km
0
1
2
3
4

Figure 2. Mount Harper area. Distribution of rocks deposited during 3 stages in the growth of the Mount Harper volcanic complex, upon which interpretive Figures 3, 7 and 10 are based. Earliest volcanic rocks and adjacent underlying sedimentary units are shown here.

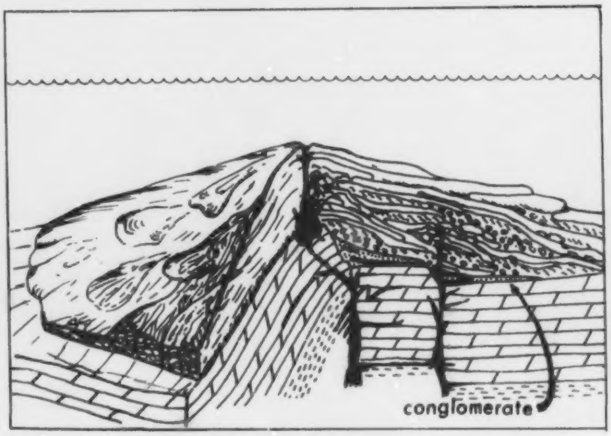

conglomerate

Figure 3. Schematic cutaway view of a submarine shield volcano (Stage I). Pillow lava flows and breccias, not to scale, are redrawn from photos and sketches.

Figure 4. Flow-foot breccia. Amoeboid pillow lava shapes are suspended in chloritic 'ash.' From member 'a', 4 km south of Mount Harper.

(Figure 4). Breccia units are tabular but poorly layered, showing instead a marked foreset stratification, defined by the long orientation of pillows and fragment trains, as well as diagonal bands of finer clasts. This breccia prograded in advance of thicker pillowed and massive flows, and is generally overlain by them.

'Broken pillow breccia' (Carlisle, 1963) is a chaos of angular fragments that include blocks with diagnostic 'melon-rind' shapes (pieces of disintegrated pillow rims) that form at the base of steeper paleoslopes. Intercalated lenses several metres thick consist of medium - to fine-grained chloritic fragments where glass dust was winnowed away from the tumbling lava blocks. Such breccia deposits taper strongly, lack uniform textures, and probably occurred where lavas overran previous flow fronts, gullies and fault scarps.

Stage II: Emergent Mafic Volcanism

Pillow lavas at the base of middle mafic member 'c' can be difficult to distinguish from those of 'a' except in the southwest part of the complex where 150 m of tabular, intermediate to felsic flows (member 'b') separates them. Distribution of the four facies of member 'c' is shown in Figure 5. Although their order is variable, they occupy the same stratigraphic interval, and deductions can be made about the shape and growth of the stage II edifice.

Facies 'c_{i}' (Roots, 1983) consists of shallow water lavas and breccias. Pillows are large (up to 3m high), rarely show preferred flow direction and are sometimes dome-shaped. They are characterized by hematitic and highly amygdaloidal rims. These 'mega-pillows' are overlain by distinctive breccias (facies 'c_{ii}') composed of angular mafic fragments, often with bleached rims (Figure 6) and shards (hyaloclastite) in a chloritic matrix. Structures range from chaotic, largely clast-supported frameworks to planar cross-stratified volcanic wacke with occasional cobbles. This facies is believed to mark a 'transition zone' in which lavas extruded underwater or flowed into water, explosively contracted and disintegrated into progressively smaller pieces. Its position in each stratigraphic section indicates sea level at that locality (cf. Furnes and Sturt, 1976); repetition of the facies suggests fluctuations, most likely due to periodic subsidence.

The ridges around Mount Harper consist of maroon vesicular lava flows and scoriaceous lapilli-tuff deposits (facies 'c_{iii}'). Weathering produces

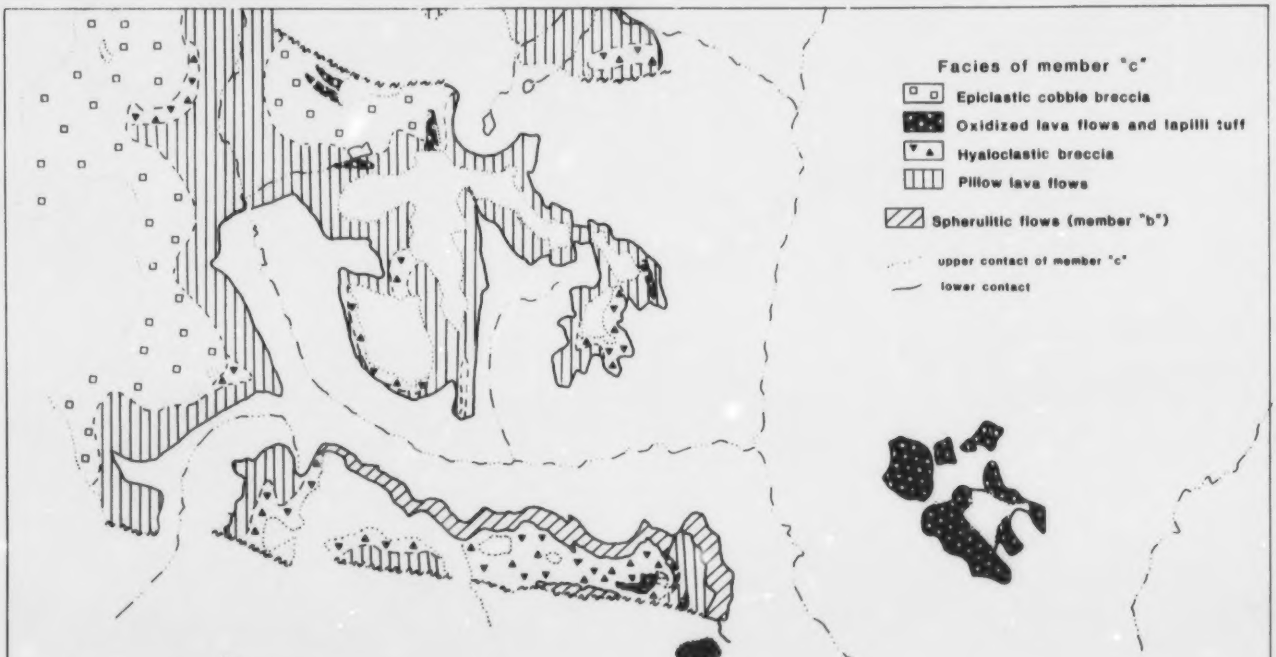

Facies of member "c"
Epiclastic cobble breccia
Oxidized lava flows and lapilli tuff
Hyaloclastic breccia
Pillow lava flows
Spherulitic flows (member "b")
upper contact of member "c"
lower contact
km
0
1
2
3
4

Figure 5. Mount Harper area. Distribution of subaqueous, transitional and subaerial volcanic rocks of member 'c' (Stage II).

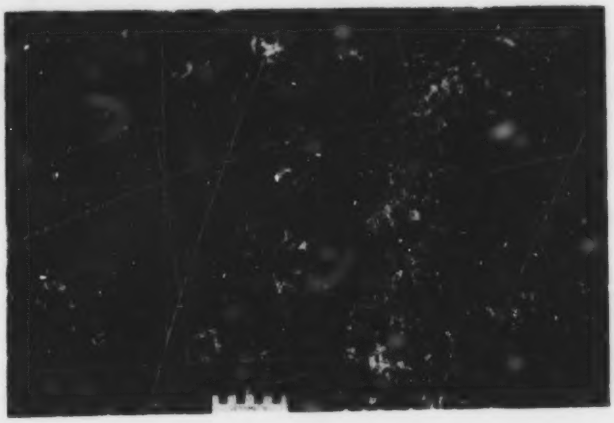


Figure 6. Breccia showing incipient fracturing and bleached rims of lava fragments, thought to be due to sudden contact with water. From facies 'c_{ii}', 'Southwest Harper' ridge, 6.9 km southwest of Mount Harper.

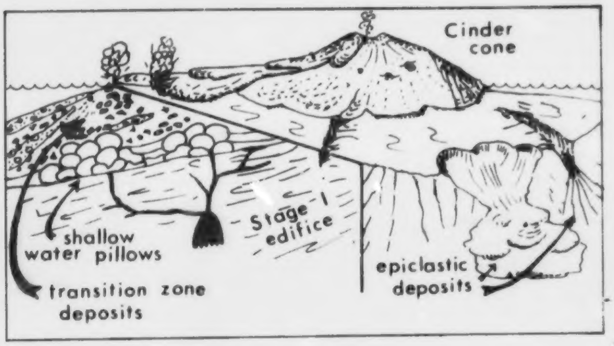

Cinder cone
shallow water pillows
Stage I edifice
transition zone deposits
epiclastic deposits

Figure 7. Schematic cutaway view of the mafic volcanic edifice at Stage II. Facies relations are as observed along 'Southwest Harper' ridge to the distal western part of the complex.

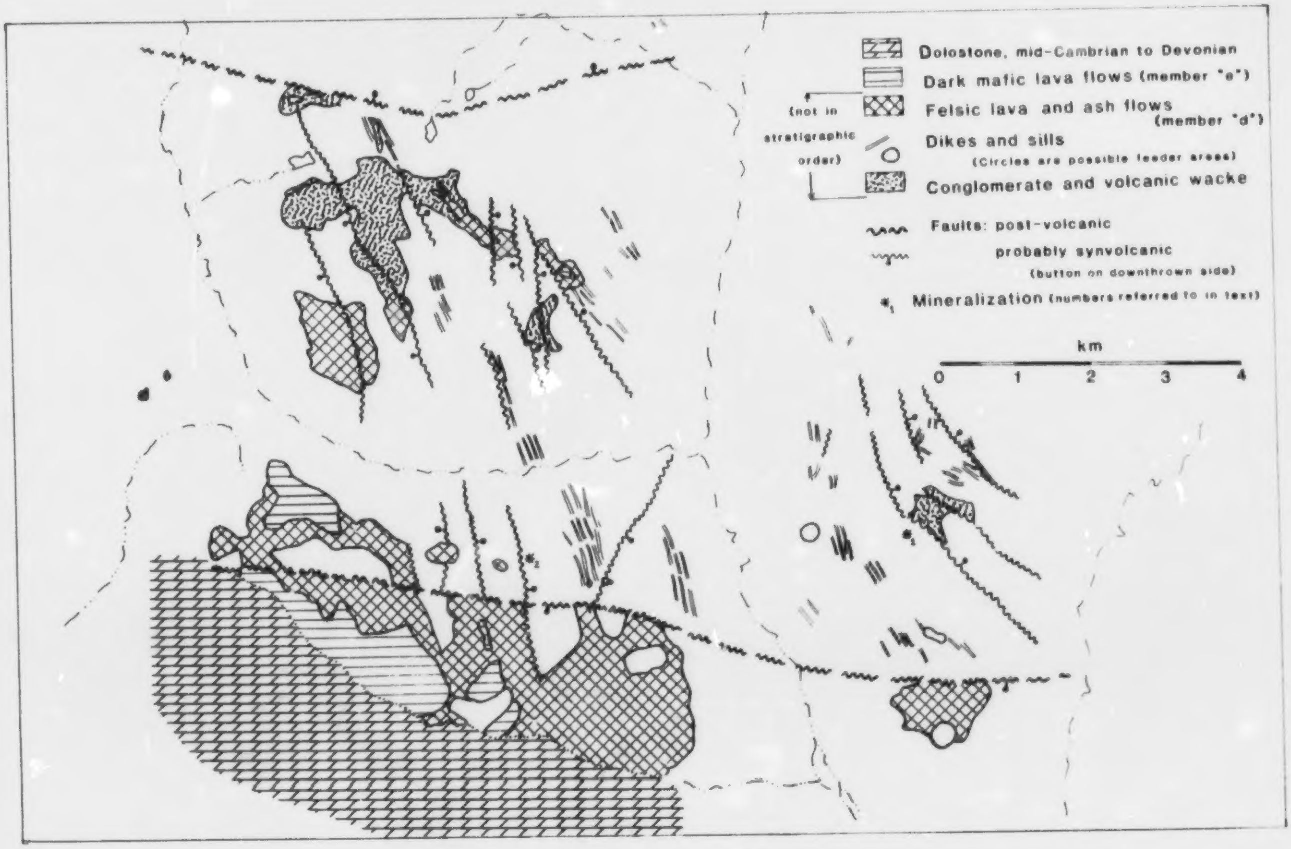

Dolostone, mid-Cambrian to Devonian
Dark mafic lava flows (member "e")
Felsic lava and ash flows (member "d")
Dikes and sills
(Circles are possible feeder areas)
Conglomerate and volcanic wacke
(not in stratigraphic order)
Faults: post-volcanic
probably synvolcanic
(button on downthrown side)
Mineralization (numbers referred to in text)
km
0
1
2
3
4
1
2
3

Figure 8. Mount Harper area. Distribution of the upper members of the volcanic complex and the adjacent portion of the overlying dolostone unit (Stage III).

vesicular textures suggestive of the original cinder, and some cored lapilli are preserved. Up to 70m thick, the interdigitated pyroclastic and lava accumulations are remnants of a cinder cone that was probably built above sea level (Figure 7). Similar oxidized vesicular rocks within the hyaloclastite breccias and 'c_i' flows elsewhere may be minor subaerial eruptions, or (more likely) slumped portions of eroded cones.

Facies 'c_{iv}' includes subrounded cobble breccias with a volcanic sand matrix, that form laterally continuous beds 2-5m thick, most extensive in the wide valley of the western part of the Mount Harper complex. Most clasts are vesicular, purple or reddish, and were derived from resistant rocks of member 'c'. Finely laminated siltstone horizons and soft sediment deformation of some layers implies a low energy environment of rapid deposition. This facies is interpreted as a distal accumulation from the erosion and reworking of pyroclastic piles, probably continuing throughout eruption of later volcanic members (subaerially erupted products on small volcanic islands are preferentially preserved as subaqueous flank deposits, (Ayres,1982).

The distribution of these facies, from oxidized piles in the east to epiclastic layers to the west, suggests westward transport down a flank of the ancient volcanic edifice. Along distinct horizons in the cliffs of 'Southwest Harper' ridge, interdigitation of the four facies can be examined. Further study will document the westward progradation as the volcano increased in size, and sea level transgressions as parts of the edifice subsided.

Stage III: Felsic Volcanism and Block Faulting

Quartz and feldspar-phyric lavas and less common ash flows (member 'd') weather dark reddish, forming blocky, rubble-covered slopes and several conical hills 30-250m high. Few outcrops show internal structures or facies relationships from which environments might be interpreted. The lavas may have been fed by northwest-trending swarms of dykes that intrude lower members and appear compositionally equivalent to member 'd'. Normal faults that also trend northwest, with vertical offsets up to 50m, have traces that run beneath the felsic hills (Figure 8) and probably occurred along planes of weakness opened by dykes during and after the felsic eruptions.

Sedimentary units, both underlying and intercalated with the felsic flows (Figure 9) contain lapillistone and cobble breccias (smooth, rounded rhyolite boulders are locally common), and are interlayered with paraconglomerate derived from dolostone units older than the volcanic complex. Presence of the latter indicates that the volcanic edifice was in part lower than the adjacent older dolomite reefs (Figure 10). Although the dimensions of the sedimentary basin cannot be determined from its erosional remnants, changes in bed thickness and clast size imply near-shore environments, as well as periodic adjustments of the fault blocks (Figure 11).

Felsic member 'd' is overlain in the southwestern corner of the complex by massive basalt flows ('e'). Except for local highly vesicular pillows, the lavas lack internal textures and are notable primarily for their blue illite-chlorite alteration. Member 'e' is overlain by *Archeocyathid*-bearing dolostone, indicating cessation of volcanic activity by lower Cambrian time.

Figure 9. Epiclastic sedimentary layers with intercalated lava flows of member 'd'. Visible section on right side is 70 m thick from bottom of photo. From 'West Harper' subarea, 7.5 km northwest of Mount Harper.

MINERALIZATION

Mount Harper Complex has limited demonstrated economic mineral potential,but the tectonic setting and volcanic environment of Mount Harper were favourable for ore deposition and merit further exploration. Secondary pyrite occurs in interstices and altered fragment rims within the upper three members, and chalcopyrite disseminations were noted in member 'c'. Regional stream sediment geochemical sampling (G.S.C. Open File 418, 1977) reveals no anomalies associated with the volcanic complex. However, local zinc, copper and silver stream sediment geochemical anomalies have been found at several places near the boundary of the Selwyn Basin, particularly where volcanic rocks and enclosing black shales show structural disruptions.

Two localities of mineralization within the volcanic complex are marked by asterisks on Figure 8. The first consists of crystalline digenite and chalcopyrite in calcite veins cutting vesicular maroon flows (facies 'c_{iii}'). The mineralization ranges from sparse specks to 3 mm long; slivers of country rock incorporated in the veins have malachite-stained rims. Elsewhere, quartz and calcite veins are extremely rare. The second locality occurs on 'Southwest Harper' ridge, in pillowed flows thought to be facies 'c_i'. Low angle gouge zones contain pods up to 20 cm long in which specularite crystals form a dense envelope up to 7 mm thick enclosing loose red hematite. Traces of azurite and malachite occur in the gouge, but no sulphide minerals were found. Such shears may be common, but difficult to recognize in rubble and fractured exposures. Although these occurrences are solitary, they suggest that trace amounts of copper are present in the lavas of member 'c'.

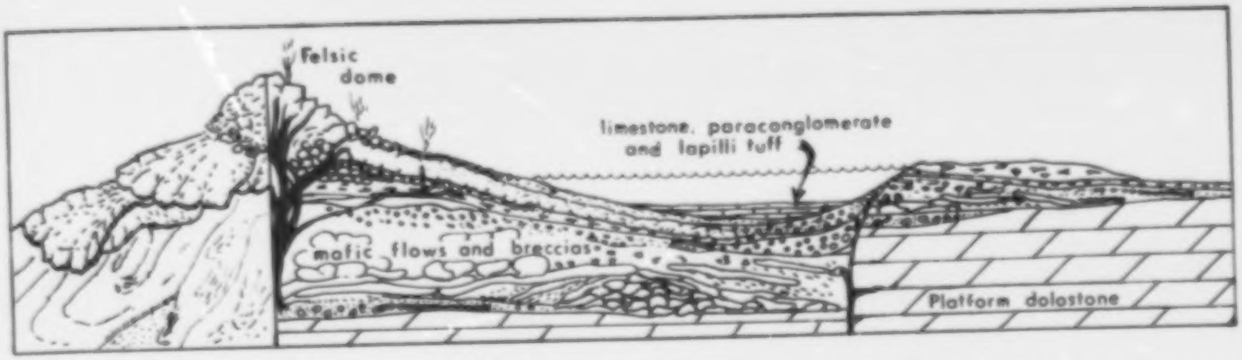


Figure 10. Schematic section of a basin developed during stage III volcanism. This interpretation is based upon stratigraphic relations observed in the 'west Harper' subarea.

Figure 11. Intervolcanic epiclastic basin remnant 1 km south of Mount Harper. Throw on the fault to the right of centre is 70 m.

CONCLUSION

Field studies at Mount Harper point to important differences between the stratigraphy of a volcanic complex and that of a typical sedimentary assemblage of similar scale. As volcanism builds a topographically positive feature, extreme changes in thickness and facies become more common, and multiple source areas develop. Under conditiions of rapid erosion, angular unconformities and cases of reversed stratigraphy multiply. Products of shallow water and subaerial volcanism are preferentially preserved as subaqueous breccias in deeper water environments. Younger lavas tend to fill depressions between older flows and, in places, progressively older rocks are uncovered, eroded and then deposited on top. Interpretation of field relations within volcanic rocks requires both detailed scrutiny as well as observations from a distance. Volcanism is among the most random of geologic processes to form rocks that are preserved in sequential deposits, and it is wise to uphold the disclaimer that "although all evidence fits my proposed model, events did not necessarily occur in that way."

Although broadly similar in composition and texture, the volcanic rocks in the Selwyn Basin and on the adjacent Mackenzie Platform represent different ages and tectonic regimes. The Ordovician piles may have resulted from intermittent fissure effusions, during deposition of black clastic sediments. That this volcanism occurred contemporaneously at several localities across the Selwyn Basin implies a regional magmatic event, such as crustal thinning during extension.

Mount Harper complex, on the Mackenzie Platform, is the manifestation of a significant structural event, marked by a major unconformity elsewhere (R.I. Thompson, pers. comm.). Over much of the Ogilvie Mountains, the overlying unit is a massive, shallow water dolostone unit of lower Cambrian to Devonian age (A.W. Norris, pers. comm. to Thompson, 1982); in the study area this unit overlies the Mount Harper complex and the unconformity is marked by the conglomerate below. Thus, the volcanic pile records the period during which most of the shelf assemblage was subject to varying degrees of erosion and non-deposition. Stratigraphy from the base to the top of the complex preserves not only a classic history of magmatic evolution and volcanic construction and collapse, but also the time interval, whether a few million, or a few hundred million years, of a regional event. Radiometric dating may forge one solid link between the Ogilvie Mountains stratigraphy and one of several 'orogenic events' proposed from unconformities in the sedimentary records to east and west.

REFERENCES

AYRES, L.D., 1982. Pyroclastic rocks in the geologic record. *in* Pyroclastic volcanism and deposits of Cenozoic intermediate to felsic volcanic islands with implications for Precambrian greenstone-belt volcanoes; (Ed. by L.D. Ayres) Geological Association of Canada Short Course notes Volume 2, pp. 1-17.

BELL, R.T., 1982. Comments on the geology and uraniferous mineral occurrences of the Wernecke Mountains, Yukon and District of Mackenzie; Geological Survey of Canada Paper 82-1B, pp. 279-284.

CARLISLE, D., 1963. Pillow breccias and their aquagene tuffs, Quadra Island, B.C.; Journal of Geology, Volume 71, pp. 48-71.

CECILE, M.P., 1982. The lower Paleozoic Misty Creek embayment, Selwyn Basin, Yukon and Northwest Territories; Geological Survey of Canada Bulletin 335, 78p.

FURNES, H. and STURT, B.A., 1976. Beach, shallow marine hyaloclastite deposits and their geological significance: an example from Gran Canaria; Journal of Geology, Vol. 84, pp. 439-454.

GREEN, L.H., 1972. Geology of Nash Creek, Larsen Creek and Dawson map-areas, Yukon Territory; Geological Survey of Canada Memoir 364, 155 p.

JONES, J.G. and NELSON, P.H.H., 1970. The flow of basalt lava from air into water; Geological Magazine, Vol. 107, pp. 13-20.

ROOTS, C.F., 1982. Ogilvie Mountains Project, Yukon; Part B: Volcanic rocks in north central Dawson map-area; Geological Survey of Canada Paper 82-1A, pp. 411-414.

1983. Mount Harper complex, Yukon: Early Paleozoic volcanism at the margin of the Mackenzie Platform; Geological Survey of Canada Paper 83-1A, pp. 423-427.

THOMPSON, R.I. and ROOTS, C.F., 1982. Ogilvie Mountains Project, Yukon; Part A: A new regional mapping program; Geological Survey of Canada Paper 82-1A, pp. 403-411.

UPPER TRIASSIC ROCKS AT HILL 4308,
LABERGE MAP AREA, 105 E, Yukon

by

Pamela Reid
University of Miami
Fisher Island Station
Miami Beach, Florida 33139

and

Jennifer O'Brien
Dept. of Geological Sciences
University of British Columbia
Vancouver, B.C.

ABSTRACT

Upper Triassic carbonate, volcanic and clastic rocks deposited in the Whitehorse Trough, a Mesozoic forearc basin, are well-exposed at Hill 4308. The deposition of these rocks occurred in three distinct stages: 1) sedimentation of lime sands and clastics on the flank of a volcanic high, 2) development of reefal carbonates and associated limestones, and 3) renewal of clastic deposition with both erosion and continued growth of patch reefs. The reefal carbonates are similar in structure and composition to reefal carbonates at Lime Peak about 6 km to the south, but the stratigraphic section at Lime Peak differs from that at Hill 4308, the former representing more continuous deposition of carbonate on an underlying clastic foundation. Differences between Hill 4308 and Lime Peak may reflect local variation in relative sea level and in the distribution and intensity of clastic sedimentation experienced by nearby localities in tectonically active areas.

Introduction

The Upper Triassic carbonate, volcanic and clastic rocks in the Whitehorse Trough were deposited in the forearc basin of a Mesozoic subduction system (Tempelman-Kluit, 1979). Previous studies at Lime Peak (Reid 1981, 1982) established the major carbonate facies, but revealed little about the associated volcanic and clastic rocks because the section at Lime Peak is mostly limestone. In contrast, clastic, volcanic and carbonate rocks are exposed at Hill 4308 in the Laberge map area.

A field study of the rocks at Hill 4308 formed part of our investigation of carbonates in the Whitehorse Trough in the summer of 1982. Principal reasons for studying this hill were: 1) to observe the clastic-carbonate rock association, 2) to observe the succession of faunas within the carbonate rocks, and 3) to assess the general usefulness of the carbonate facies defined at Lime Peak. This report summarizes the results of our study at Hill 4308.

GENERAL SETTING

Hill 4308 is east of Lake Laberge, north of Laurier Creek, about 50 km northeast of Whitehorse and 6 km north of Lime Peak (see Figure 1). The study area is about 4.5 km from north to south and about 3 km from east to west. Conodonts recovered from the section at Hill 4308 by Tim England are Upper Norian (England, 1980).

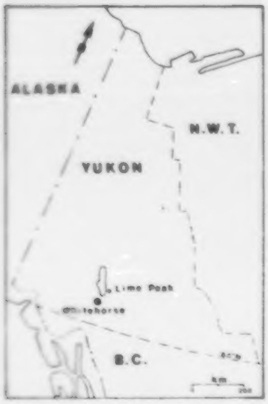


Figure 1. Index map showing the location of Lime Peak (Hill 4308 is 6 km to the north).

The rocks at Hill 4308 strike about 030° and dip northwest at 30°. A small reverse fault on the eastern face of the hill reflects north-south compression with little vertical movement (see Figure 2).

4308 refers to the elevation, in feet, of this hill on the 1:250,000 Laberge map sheet 105 E; the elevation on the 1:50,000 map sheet 105 E 3 East is 4319 feet.

RESULTS OF THE FIELD STUDY

Hill 4308 was mapped using air photo A 11472-354. Five major lithologic units were recognized; the distribution of these units is shown in Figure 2 and the characteristics of the rocks in each unit are summarized in Table 1. A brief discussion of each unit is given below, followed by a depositional history and a comparison of the rocks to those at Lime Peak.

LITHOLOGIC UNITS

Green volcanic rocks form a massive structural high at the base of the section at Hill 4308 and appear to be onlapped by clastics and lime sands. They are intermediate in composition, a mixture of flow breccia and volcanic sandstone.

Dacite up to 150 m thick occurs mainly in the middle of the section, generally conformable with the surrounding limestone. It may have formed as a viscous plug dome which was onlapped by and interfingered with reefal carbonates, or, more likely, it represents a later intrusive event. Similar rocks elsewhere in the Laberge map area form thin dykes which clearly intrude Triassic carbonate and clastic rocks. Radiometric age dates of the dyke rocks range from Upper Triassic to Jurassic, 209-160 Ma (D.J. Tempelman-Kluit, 1982 pers. comm.).

Yukon Exploration and Geology 1982, p. 63-67

Clastic rocks are found at two levels: near the base of the section are sandstone, siltstone and conglomerate with clasts up to 2 cm in a red sandy matrix; in the upper part of the section, the same sandstone and siltstone occurs, but the conglomerate is much thicker and contains volcanic and limestone clasts commonly 6-9 cm in diameter in a dark green siliciclastic matrix. The sandstone, siltstone and fine conglomerate are physically and chemically somewhat mature and are probably reworked sediments which may have been derived from the dacite or the green volcanic rocks. However, the coarse conglomerate, is extremely immature and probably represents first cycle sediments eroded from volcanic and limestone exposures during rapid uplift. The clastic rocks surround many of the limestones at Hill 4308, but there is relatively little intermixing of them. Several explanations are possible: a) the limestone accumulated only when or where clastic influx was low, b) the clastic rocks may have been deposited in low areas around limestone patches or c) there may have been alternating periods of limestone and clastic deposition.

Lime sands at Hill 4308 are accumulations of skeletal and non-skeletal grains that form pods and beds from a few meters to about 30 meters thick in the lower part of the section. They are similar in composition to modern shallow water carbonate accumulations. In particular, the presence of ooids, the abundance of peloids and grains with micrite envelopes and the occurrence of laminated nodules which are probably algal suggest water depths less than 5 meters. The lime sands probably accumulated as shoals surrounded by clastic rocks in shallow water on the flank of the green volcanic rock high.

The reefal and associated limestone unit consists of about 80% massive reefal carbonate, and about 20% dark, thick-bedded, richly fossiliferous limestone and thin-bedded, lime packstone and partly silicified lime mudstone. The massive reefal carbonate forms lenses 0.5 - 1 km long and 50-100 m thick; these lenses may be stacked on top of each other to form thick sections of carbonate such as that found at the north end of the study area (see Figure 2). Some of the massive carbonates overlie dark fossiliferous limestone, others developed directly on shoals of lime sands or clastics, and still others may have formed on the flanks of a dacite plug dome. A reef building community of small calcareous sponges, corals and tabulozoans/bryozoans formed patches of bindstone in a

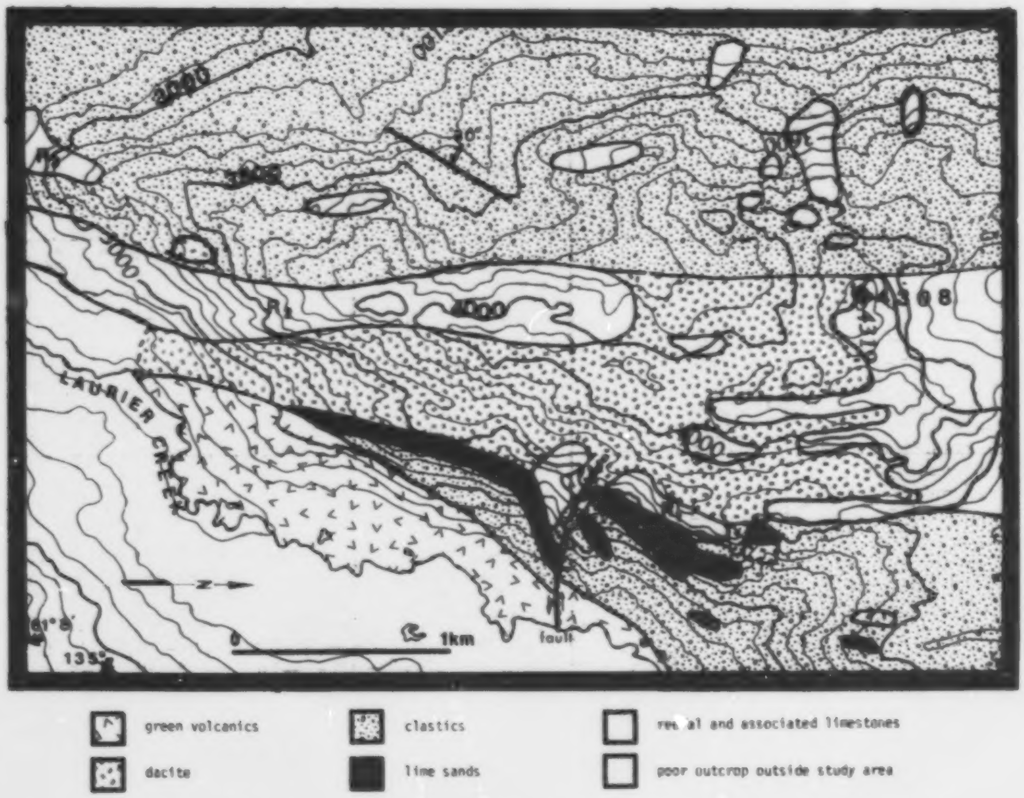


Figure 2. The general distribution of the five lithologic units at Hill 4308. Note that the elevation of Hill 4308 is 4319 feet on the 1:50,000 topographic map 105 E 3E. The contour interval is 100 feet. Letters (eg. R2) indicate equivalent outcrops in Figure 3.

shallow agitated environment. In Triassic limestones in Europe, large toothed bivalves called megalodonts are restricted to shallow-water, back-reef lagoons. However, at this locality in Yukon, the restricted occurrence of megalodonts indicates there was only a slight differentiation of facies in some of the reefs, but in general, no horizontal zonation of reef building organisms, indicating that there was no strong asymmetry of wave action. In addition, there was no vertical evolution of organisms within the reef, except for the appearance of the platy spongiomorph, *Spongiomorpha gibbosa*, about half way up the section (see Figure 3).

The third stage of sedimentation (Stage III/ Figure 3) involved renewed clastic deposition accompanied by sporadic uplift, exposure and erosion of patch reefs, and periods of patch reef growth. During the surges of clastic input, volcanic sands and coarse, poorly-sorted conglomerate containing volcanic rock and limestone clasts may have been deposited in low areas around exposed patch reefs. As the volcanic input decreased, volcanic rock clasts became less prevalent and the conglomerate became dominated by limestone clasts in a fine siliciclastic matrix. Finally, limestone sedimentation recommenced with the deposition of thick, dark, fossiliferous limestone beds followed by the reestablishment of reef-building communities forming new patch reefs.

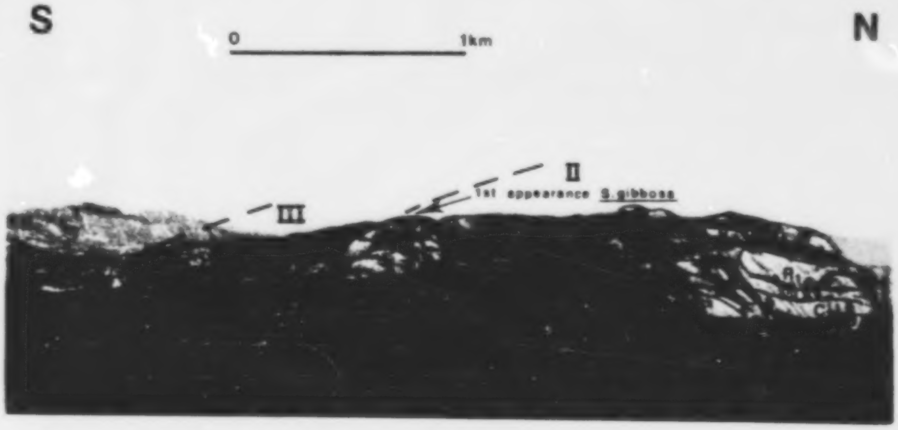


Figure 3. Stages of sedimentation at Hill 4308:
- I deposition of lime sand (LS) and clastics (C) on the flank of a high of green volcanics (not seen in photo)
- II accumulation of reefal and associated limestones (R); dacite (D) probably intruded ls. section later in the Jurassic
- III renewal of clastic sedimentation and erosion and continued growth of patch reefs (R)

Subscripts (eg. R_2) indicate equivalent outcrops in Figure 2.

DEPOSITIONAL HISTORY

Three distinct stages of sedimentation have been recognized (Figure 3). Initially, carbonate sands and volcaniclastic silts, sands and conglomerate were deposited together in shallow water on the flank of a topographic high of volcanic sands and flows; the authochthonous carbonate formed as shoals and is interbedded with and surrounded by allochthonous clastic rocks (Stage I, Figure 3).

As the volcanic high was transgressed, clastic input decreased and the lime sand formed a relatively widespread indistinctly bedded layer approximately 30 m thick. With continued transgression, a reef-building community of small calcareous sponges, tabulozoans/bryozoans, and *Thecosmilia* corals colonized the shoals formed by both lime and clastic sands (Stage II, Figure 3). This community thrived in an agitated surf zone and submarine cements developed in the well-washed voids. The growth of patch reefs may have been accompanied by the emplacement of a dacite plug dome, but, more likely, the dacite intruded the limestone section later in the Jurassic.

Comparison to Lime Peak

Rocks at Hill 4308 are compared to those at Lime Peak (described by Reid 1981, 1982) in Table 1. The stratigraphic sections of the two localities are compared in the schematic drawings in Figure 4. The green volcanic rocks and the lime sands at Hill 4308 are not found at Lime Peak. The dacite, clastic rocks and reefal and associated limestones at Hill 4308 are similar to rocks at Lime Peak, although the dacite at Lime Peak forms only thin dykes which are not shown in Figure 4. The main difference between the reefal carbonate at Hill 4308 and at Lime Peak is the abundance of the platy spongiomorph, *Spongiomorpha gibbosa*. This spongiomorph is common in the massive limestone at Lime Peak and is a major contributor to the bedded limestone facies. At Hill 4308, however, *S. gibbosa* first appears half way up the section in the massive limestone (see Figure 3) and is never particularly abundant in either the

TABLE I

CHARACTERISTICS OF ROCKS IN THE MAIN LITHOLOGIC UNITS AT HILL 4308 AND COMPARISON TO ROCKS AT LIME PEAK

Lithologic Unit and Characteristics of Rocks	Comparison to Lime Peak
I. Green Volcanics dark weathering, structureless, flow breccias and volcanic sands; angular maroon and green volcanic rock fragments in a fine matrix; rock fragments commonly have augite phenocrysts.	no similar rocks at Lime Peak; rocks at Lime Peak may be younger than the green volcanics.
II. Dacite unbrecciated, orange-red rocks with phenocrysts of hornblende and feldspar; unit is up to 150 m thick and forms cliffy outcrops; generally conformable with surrounding limestones and clastic rocks with some cross-cutting relationships.	similar to dikes which intrude limestone at Lime Peak, but the dikes at Lime Peak are only a few meters thick
III. Clastic Rocks Sandstone and siltstone: recessive, limey, red and green moderately sorted mixtures of weathered feldspars, volcanic rock fragments and quartz. Conglomerate: more resistant well-bedded rocks; some are thin with subangular volcanic and limestone clasts up to 2 cm in diameter in a sandy red matrix; others are thick (up to 15 m) with volcanic and limestone clasts that are commonly 6-9 cm in diameter in a dark green siliciclastic matrix; coarse cg. show vertical succession from volcanic and limestone clasts at bottom of section to mainly limestone clasts at top. Sand, silts and conglomerates may be interbedded or may be laterally equivalent; clastics surround many of the limestone but there is relatively little mixing of clastics and carbonates.	similar to the clastic rocks under the limestone section at Lime Peak, but in general the clastics at Hill 4308 are coarser and surround or are laterally equivalent to the carbonates.
IV. Lime Sands light-dark grey, in general, indistinctly bedded but in places laminated or thinly layered; grain supported mixtures of peloids, crinoids, forams, thin shells, ooids, recrystallized grains with micrite envelopes, various micritized fragments and occasional detrital grains including quartz, feldspar and rock fragments; grains surrounded by lime mud (packstones) or by calcite cement (grainstones); no macrofossils except one 1 cm band of laminated nodules composed of a mass of partially silicified tubules approx. 25 um in diameter.	no similar rocks at Lime Peak; may be older than the carbonate section at Lime Peak or may represent a facies which was not developed at Lime Peak.
V. Reefal and Associated Limestones Reefal Limestones: white weathering, resistant, massive limestone; patches of macrofossils (20-60%) surrounded by lime sands; principal organisms - small chambered and unchambered calcareous sporoes, tabulozoans/bryozoans, corals, crinoids and shells; skeletons generally unbroken; many skeletons bound together to form patches of bindstone, others not bound and form patches of floatstone/rudstone (definitions according to Embry and Klovan, 1971); isopachous cements and layered internal sediments common in voids; little horizontal zonation of reef building community except for the restriction of megalodonts to the western dip slope of some of the limestone half way up the section; no vertical change in community except for appearance of Spongiomorpha gibbosa about half way up the section.	similar in structure and composition to massive thick lenses and irregular masses at Lime Peak which are mainly accumulations of lime sands with scattered patches of bindstone and floatstone/rudstone; there are no rocks at Hill 4308 which are similar to the thin tabular massive limestone at Lime Peak which are mostly bindstone.
Associated Limestones: a) dark, thickly-bedded, richly fossiliferous limestone; contain large calcareous sponges, corals and shells; commonly underlie the reefal limestone.	similar to the bedded limestones at Lime Peak.
b) thinly-bedded lime packstones and partly silicified lime mudstones; commonly adjacent to the reefal limestones.	similar to the shaley limestones at Lime Peak.

massive or the dark, bedded limestone. The presence, absence or abundance of S. gibbosa may be related to age of the limestone (i.e. the limestone section at Lime Peak is time equivalent only to the upper half of Hill 4308) or may be related to environmental factors (i.e. S. gibbosa simply did not like the living conditions in the lower half of Hill 4308!).

The depositional history of Lime Peak differs from that at Hill 4308. Sedimentation at Lime Peak involved more continuous deposition of carbonates on a clastic foundation. There may have been considerable variation in rates of subsidence and some subaerial exposure of the carbonates at Lime Peak (Reid, 1982), but erosion of the carbonate was not extensive and there is no record of volcaniclastic deposition during patch reef development.

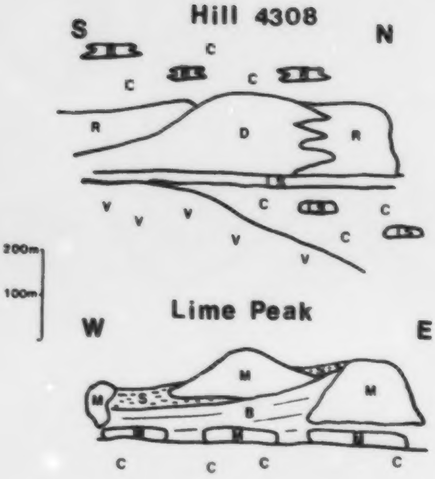


Figure 4. Schematic cross-sections showing differences between the stratigraphic sections at Hill 4308 and Lime Peak. The reefal and associated ls. (R) at Hill 4308 are equivalent to the massive limestone (M), the bedded limestone (B) and the shaley limestone (S) at Lime Peak. Green volcanics (V), lime sands (LS) and thick sections of dacite (D) are not found at Lime Peak. Clastic rocks (C) underlie the limestone section at Lime Peak, whereas they surround many of the limestones at Hill 4308.

The differences between Lime Peak and Hill 4308 may be partly explained by differences in the age between the two sections (the green volcanic rocks at Hill 4308 may be older than rocks at Lime Peak); however, Upper Norian conodonts have been recovered from both Hill 4308 and Lime Peak, indicating that at least some of the carbonate rocks are time equivalent. Therefore, differences in the stratigraphic sections likely reflect variation in relative sea level changes and in the distribution and intensity of clastic sedimentation.

SUMMARY

Clastic rocks ranging from siltstone to coarse conglomerate surround many of the limestones at Hill 4308. However, there are no clastic grains in the massive, reefal carbonate and only a low percentage of clastic grains in the other carbonate facies, indicating that carbonate accumulated when or where clastic influx was very low. The clastic rocks may have been deposited in low areas around the patch reefs or there may have been alternating periods of clastic influx and limestone deposition.

Vertical carbonate succession at Hill 4308 begins with non-reefal lime sand composed of crinoid fragments, forams, peloids, ooids and small shells. This is followed by reefal limestone composed mainly of calcareous sponges, tabulozoans/bryozoans and corals. This vertical succession reflects a change in depositional environments from shallow shoals in a dominantly clastic lagoon to cleaner, more open-marine, well-agitated conditions. The reef-building community itself shows little vertical change except for the appearance of Spongiomorpha gibbosa about half way up the section. The appearance of S. gibbosa may reflect the age of the carbonates or may be related to environmental factors.

The carbonate facies recognized at Lime Peak by Reid (1980, 1981) are similar to those at Hill 4308 and may be characteristic of reefal buildups in the Whitehorse Trough. As well as the carbonate facies defined as Lime Peak, an additional non-reefal lime sand facies was recognized at Hill 4308; this facies may represent a depositional environment not developed at Lime Peak. Although the carbonate facies at Hill 4308 and Lime Peak are very similar, the stratigraphic sections in the two locations are quite different. The differences may reflect variations in relative sea level changes and in the distribution and intensity of clastic sedimentation which can be experienced by nearby localities in tectonically active areas.

ACKNOWLEDGEMENTS

We are particularly grateful to Dirk Tempelman-Kluit and Grant Abbott for help and discussion in the past three summers. We would like to thank the Exploration and Geological Services Division (Yukon) of DIAND for support of the project.

References

EMBRY, A.F. and J.E. Klovan. 1971. A late Devonian reef tract on northeastern Banks Island, Northwest Territories; Bull. of Can. Petrol. Geology, 19: p. 730-781.

ENGLAND, T.D.J. 1980. A study of Upper Triassic conodonts of Intermontane belt, Yukon Territory; Unpubl. B.Sc. Thesis., U.B.C. Vancouver, 55 pp.

REID, R.P. 1981. Report of field work on the Upper Triassic reef complex of Lime Peak, Laberge map area, Yukon, p. 110-114 in Yukon Geology and Exploration 1979-1980, Dept. of Indian and Northern Affairs, 1981, Whitehorse, Yukon.

REID, Pamela. 1982. The co-variation of lithology and geometry in Triassic reefal limestones at Lime Peak, Yukon; Yukon Exploration and Geology 1981, Dept. of Indian Affairs and Northern Development, 1982, Whitehorse, Yukon.

TEMPELMAN-KLUIT, D.J. 1979. Transported cataclasite, ophiolite and granodiorite in Yukon: evidence of arc continent collision; Geological Survey of Canada, Paper 79-14, 27 pp.

THE SKUKUM VOLCANIC COMPLEX, 105 D SW: GEOLOGY AND COMPARISON TO THE BENNETT LAKE CAULDRON COMPLEX

By M.J. Smith

Dept. of Earth Sciences
University of Manitoba

INTRODUCTION

Several centres of continental volcanism are situated in southern Yukon. Two of these, the Skukum Volcanic Complex and the Bennett Lake Cauldron Complex (BLCC) are closely associated in space and gross geological characteristics, including their important role as hosts for epithermal precious metal mineralization. The BLCC was studied extensively by Lambert (1974) and the Skukum complex is currently under investigation by the author.

The Skukum complex was previously thought to represent a similar structural and volcanic setting to the BLCC (Wheeler, 1961). Study of the Skukum complex began in the summer of 1982 with the idea that it represented a cauldron subsidence feature and that an improved understanding of its geology would assist in developing potential targets for mineral exploration. The geology in the area is complex due to the discontinuous nature and incomplete exposure of volcanic units and is further complicated by severe faulting. Mapping was only partly completed in the 1982 field season and the ideas present in this report are subject to change as research continues.

The early Tertiary BLCC is 80 km south of Whitehorse; the nearby Skukum complex of probable similar age is located 58 km SSW of Whitehorse. Both complexes exhibit topographical features typical of the Coastal System. In the BLCC, elevations range from 655 m to 2,300 m a.s.l. with an average relief of the tributary valleys of about 1,050 m. Elevations in the Skukum complex range from 950 m to 2,378 , a.s.l. (Mt. Skukum), with an average relief of about 700 m. The terrain is rugged, has high relief and is deeply incised with youthful and glacially scoured valleys. Other glacial features include cirques, horns, serrated ridges and moraine deposits.

GEOLOGY

The Skukum complex and the Bennett Lake Cauldron Complex are both elliptical in plan, early Tertiary in age and part of the Sloko province of southern Yukon and northern British Columbia (Fig. 1). The province forms a broad northwest-trending belt along the northeastern margin of the Coast Crystalline Belt. Volcanic rocks of the Sloko province are preserved in downfaulted blocks and as erosional remnants on many higher uplands. The group is comprised of intermediate to acid volcanic and derived sedimentary rocks that lie unconformably on folded Jurassic and older (Precambrian) metasedimentary rocks and on Cretaceous granitic rocks (Souther, 1967) (Fig. 2). In Yukon, the Skukum volcanic rocks are considered to represent part of the Mt. Nansen volcanic rocks, ranging in age from 55 to 70 Ma. Mt. Nansen rocks have been described as explosive intermediate to acid volcanic rocks which intrude and are deposited on parts of the Yukon Crystalline Terrane, Whitehorse Trough and Coast Plutonic Complex, (Tempelman-Kluit, 1981).

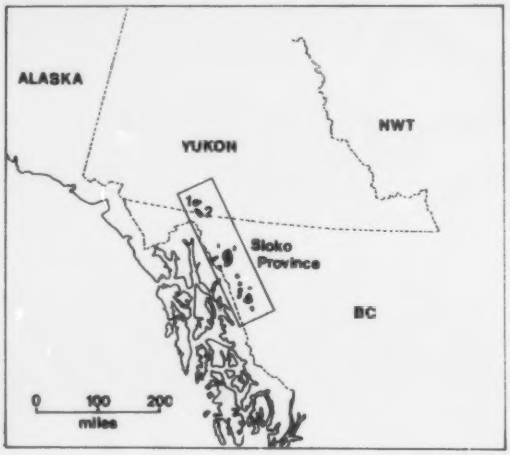


Figure 1. Distribution of the volcanic rocks of the Sloko Province and location of the 1) Skukum Volcanic Complex and 2) Bennett Lake Cauldron Complex.

BENNETT LAKE CAULDRON COMPLEX

The BLCC is deposited predominantly on Cretaceous granitic rocks of the Coast Intrusions. Much of the BLCC is rhyolite to dacite ash-flow tuff and breccia with subordinate rhyolite, dacite and andesite lava flows intercalated with epiclastic conglomerate, breccia, wacke and siltstone. Indications of cauldron subsidence are the predominance of pyroclastic rocks, the abundance of shattered and brecciated granitic rocks around the complex and evidence that the volcanic rocks lie in a depression that is roughly circular in plan and partly surrounded by a ring dyke. In his detailed report, Lambert (1974) concluded that the structure of the BLCC consists of two nested cauldrons, a central dome, concentric and radial fracture systems and a subelliptical rhyolite ring dyke.

SKUKUM COMPLEX

The Skukum complex is deposited on Cretaceous granitic rocks of the Coast Plutonic Complex and older schists and gneisses and is surrounded in part by high level rhyolite intrusions (Fig. 2). Volcanic rocks lie unconformably on granitic and gneissic rocks with the exception of a fault-bounded eastern contact. Preservation of the Skukum complex was mainly due to accumulation of the volcanic material

Yukon Exploration and Geology 1982, p. 68-72

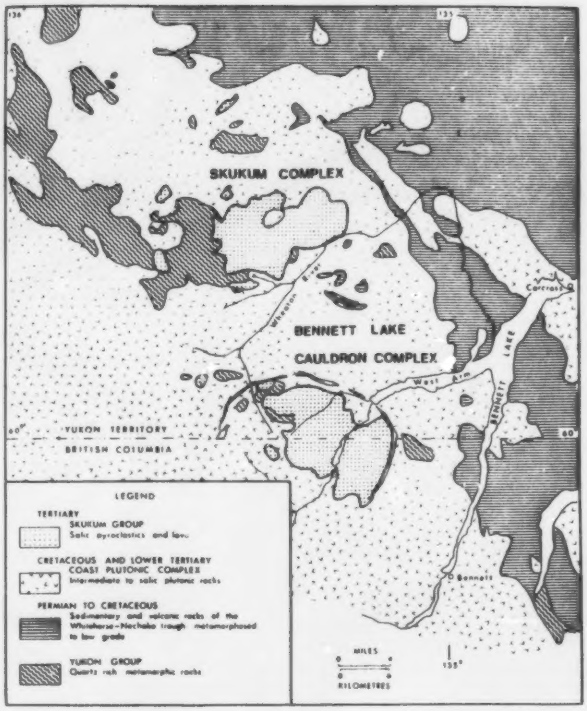

SKUKUM COMPLEX
BENNETT LAKE
CAULDRON COMPLEX
Wheaton River
West Arm
BENNETT LAKE
Carcross
Bennett
YUKON TERRITORY
BRITISH COLUMBIA
60°
135°
LEGEND
TERTIARY
SKUKUM GROUP
Salic pyroclastics and lava
CRETACEOUS AND LOWER TERTIARY
COAST PLUTONIC COMPLEX
Intermediate to salic plutonic rocks
PERMIAN TO CRETACEOUS
Sedimentary and volcanic rocks of the Whitehorse-Nechako trough metamorphosed to low grade
YUKON GROUP
Quartz rich metamorphic rocks
MILES
KILOMETRES

Figure 2. General geology of the Skukum Volcanic Complex and the Bennett Lake Cauldron Complex area (Lambert, 1974).

in a depression. Internally, the complex is severely dissected by at least 2 major faults; one along Butte Creek and another along Skukum Creek (Fig. 3). Along Skukum Creek, the volcanic rocks are down-dropped at least 450 m on the north side. The volcanic rocks to the north of Butte Creek are down-dropped at least 300 m. Outcrop patterns in Frigid and C&R cirques suggest that relatively hilly topography prevailed at the time of volcanism. Vegetation such as small shrubs are preserved in epiclastic sediments in Frigid cirque and in C&R cirque charred wood up to 25 cm in diameter is preserved in debris flows. The preserved flora is consistently found at higher elevations than the present tree line of approximately 1,200 m and shows that the environment in the early Tertiary was considerably different than the present-day environment. Many volcanic rock outliers capping basement rocks have been preserved and may represent either a distal facies equivalent to major volcanism in the Skukum complex or remnants of eruptions from other volcanic centres. The high level rhyolite intrusions peripheral to the Skukum complex were examined by the author in the summer of 1981 and were found to represent a cogenetic suite of igneous rocks (Smith, 1983). It's now doubtful that they represent intrusions along a ring fracture, but rather may represent intrusions along a more complex fracture system.

In the Skukum complex, three lithologically distinct and geographically restricted units are recognized; 1) Unit A, the lowermost unit, is composed mainly of epiclastic rocks and lava flows and is found in the western and southeastern part of the complex; 2) Unit B, a thick sequence of andesite pyroclastic rocks and lava flows, which in part overlies the

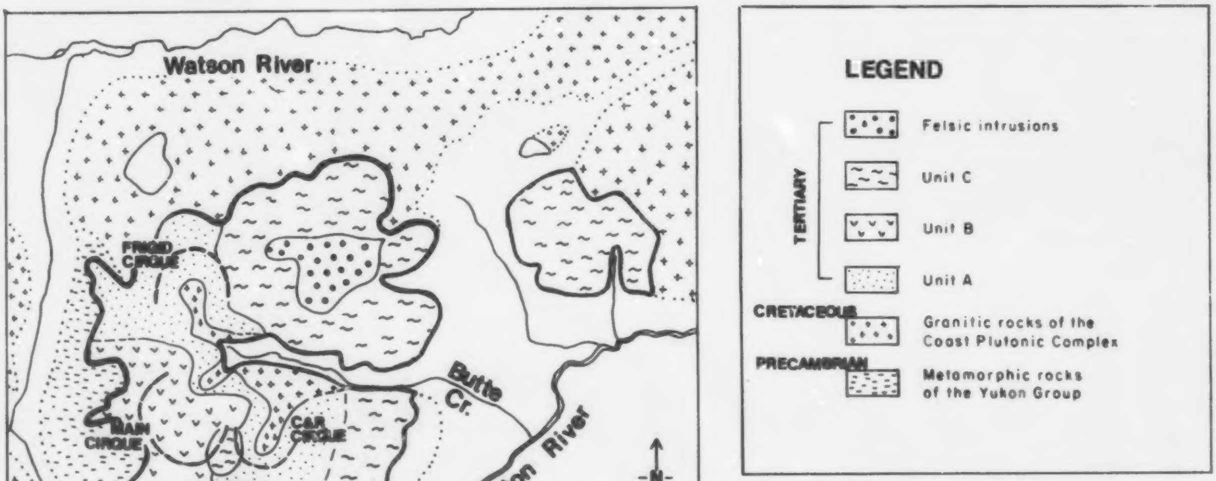
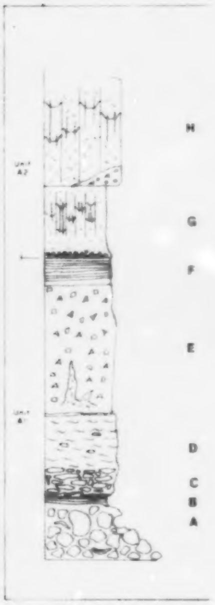

Watson River
FRIGID CIRQUE
RAIN CIRQUE
C&R CIRQUE
Butte Cr.
Skukum Cr.
Wheaton River
-N-
0
4
km
LEGEND
TERTIARY
Felsic intrusions
Unit C
Unit B
Unit A
CRETACEOUS
Granitic rocks of the Coast Plutonic Complex
PRECAMBRIAN
Metamorphic rocks of the Yukon Group

Figure 3. Major subdivisions of the Skukum Volcanic Complex.

epiclastic unit and is restricted to the northwest part of the complex; and 3) Unit C, rhyolite to dacite ash-flow tuff, possibly associated with a central dome. Felsic sills, dykes and small intrusions intrude Units A, B and C while andesitic intrusions are only found intruding Units A and B (Fig. 3).

Unit A

Unit A is exposed in Frigid cirque and can be traced along the north side of Butte Creek into C&R cirque (Fig. 4). This unit consists of a sequence of horizontal to shallowly dipping beds of volcaniclastic rocks and flows. In Frigid cirque, the sequence lies unconformably on basement rock at an elevation of approximately 1,850 m and along Butte Creek and in C&R cirque the contact is at an elevation of approximately 1,600 m. Felsic and andesite dykes and sills intrude Unit A. In Frigid cirque, Unit A can be subdivided into two subunits. The lower sequence, (A1), is comprised of debris flows, avalanche deposits, minor welded pyroclastic flows, fluvial deposits(?) fine grained, normally graded, shallow water sediments (lacustrine?) and minor airfall (?) tuff. The upper sequence (A2) is made up mainly of feldspar porphyritic andesite flows which may be filling valleys and which show features such as columnar jointing, trachytoid flow alignment and hyaloclastic basal contacts.



FRIGID CIRQUE SECTION

H. Lava flow - Columnar jointed feldspar porphyritic andesite, 20% feldspar phenocrysts in a fine grained matrix; trachytoid texture.

G. Lava flow - A feldspar porphyritic columnar jointed andesite; 5% feldspar phenocrysts less than 2 mm in size in an aphanitic to glassy matrix; its basal contact is hyaloclastic (1 - 20 cm thick comprised of 1 - 2 cm green angular glassy clasts having perlitic fractures).

F. Lacustrine tuff - very fine grained silty normally graded beds (.5 to 1 cm thickness) interlayered with coarser graded beds, deposition of fine sediment in a shallow water environment.

E. Debris flow - poorly sorted volcaniclastic unit, matrix supported; 30% clasts - aphanitic and porphyritic green volcanic clasts (altered glass?) and aphanitic and porphyritic maroon volcanic clasts; in a fine grained crystal-rich matrix.

D. Densely welded pyroclastic flow - 15% broken feldspar crystals, 50% elongate volcanic clasts with 5% granitic fragments in a fine grained to glassy matrix.

C. Breccia flow (?) - clast supported, moderately sorted, 90% clasts, (60% granitic clasts and 40% mafic volcanic clasts); clasts are oriented parallel to depositional surface, clasts less than 20 cm.

B. Debris flow (?) - well bedded unit moderately to well sorted; 95% subangular volcanic clasts less than 1 cm; the unit is capped by a very finely layered cherty unit .5-1.5 cm thick showing slump features.

A. Mass flow deposit at least 20 m thick, poorly sorted, clast supported; 70% rounded to subangular granitic clasts with minor mafic volcanic clasts, maximum size 1.5 m; 20% coarse sand size matrix, granitic in composition; crude discontinuous bedding.

Figure 4. Frigid Cirque - Vertical section through Unit A.

In C&R cirque, the sequence differs slightly. The lower sequence is debris flows and bedded reworked sediments and/or airfall material. The debris flows characteristically contain charred wood fragments, thus indicating they were emplaced while still hot. The upper sequence consists mainly of intercalated andesite lava flows and debris flows with occasional fine grained, bedded, reworked sediments. Locally, there is a wedge of pyroclastic rocks that look distinct from the rest because of an abundance of pumice fragments. Because of the larger clast size, the evidence of hot debris flows and the higher concentration of faulting, it is likely that the deposits in the C&R cirque are more proximal to the vent than those in Frigid cirque. In summary, Unit A may represent a flank of a stratovolcano, an area which is commonly composed of lava flows and reworked volcanic rocks.

Unit B

Unit B is restricted to the southwest portion of Skukum complex and overlies Unit A. It consists mainly of andesite pyroclastic rocks and lava flows. Lithologic units are difficult to differentiate due to lack of exposure, extensive (intense) alteration (silicification and calcite, epidote, chlorite), discontinuous nature of lava flows, faulting, and similar compositions from one lava flow to the next. These rocks are forcefully intruded by felsic dykes which, on the average, trend in a north-northeasterly direction, as do the faults. In the upper part of the main cirque are at least four rhyolite intrusions (domes) approximately 150 m in diameter. They are flow banded and autobrecciated. The complexity of this unit, as well as stratigraphic evidence that Unit A has been down-dropped in the Main cirque, suggests that the Mt. Skukum area may represent a collapsed vent.

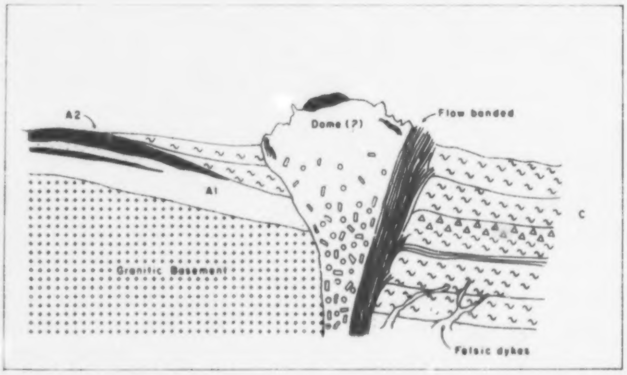


Figure 5. East-west cross section through the central intrusion showing the possible relationships between Units A, C and the intrusion.

Unit C

Unit C outcrops in the eastern half of the area and caps Unit B on the eastern ridge of Main cirque and Unit A along the eastern ridge of Frigid cirque. Due to the nature and alteration of the rocks, Unit C is poorly exposed and alters to pale pastel colours. It consists of flow banded felsic rocks and welded to non-welded felsic pyroclastic rocks with minor reworked volcanic rocks. The unit appears to be

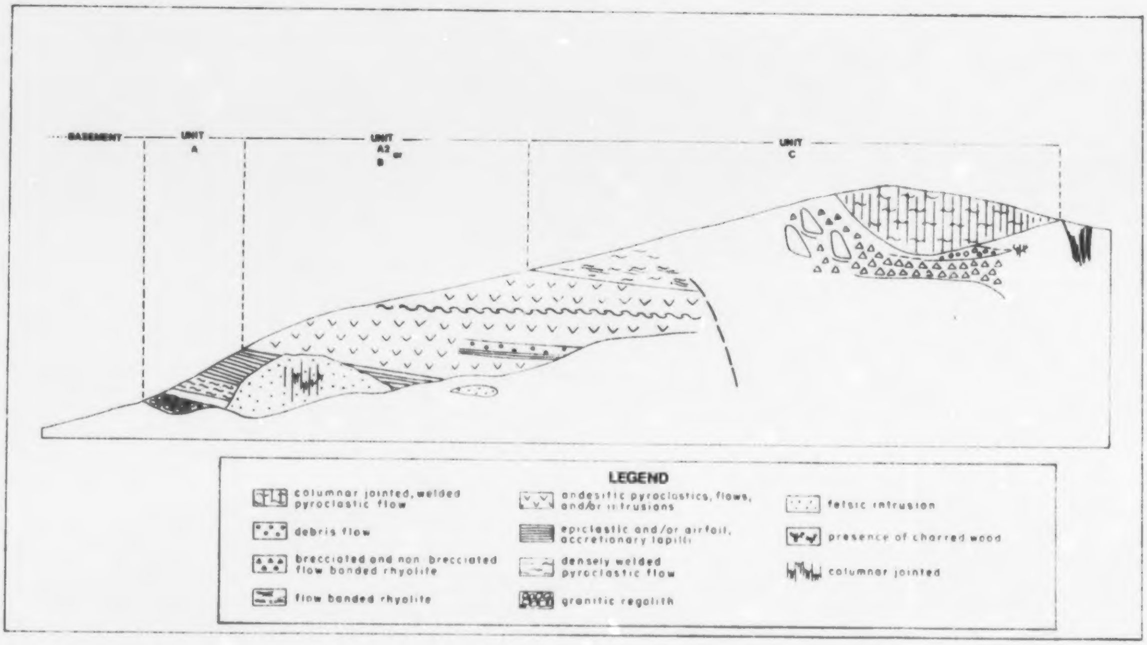

BASEMENT
UNIT A
UNIT A2 or B
UNIT C
LEGEND
columnar jointed, welded pyroclastic flow
debris flow
brecciated and non brecciated flow banded rhyolite
flow banded rhyolite
andesitic pyroclastics, flows, and/or intrusions
epiclastic and/or airfall, accretionary lapilli
densely welded pyroclastic flow
granitic regolith
felsic intrusion
presence of charred wood
columnar jointed

Figure 6. A section along eastern ridge of main cirque showing the relationship between Units A, B and C.

intimately related to a zoned porphyritic intrusion. The core of the intrusion can be described as a coarse, crowded, quartz feldspar porphyritic alaskite grading into a finer grained outer zone of porphyritic rhyolite. Extending along the eastern contact of the intrusion, a zone approximately one km in thickness of vertical to near vertical flow banded rhyolite occurs. It is in part intercalated with a thick sequence of welded to non-welded, felsic lapilli tuff, which extends all the way down to the base of Butte Creek (Fig. 5). The relationship between Units A, B and C is shown in Fig. 6 which is a section along the eastern ridge of Main cirque. It should be noted that the A2 units may be distal equivalents of the same volcanism that produced the extensive localized area of andesites near Mt. Skukum, Unit B.

CONCLUSION

In conclusion, the Skukum complex differs from the BLCC in three respects: 1) the presence of a bimodal suite of extrusive rocks suggests the tapping of two magma chambers, 2) its structural complexity and the absence of major cauldron subsidence and 3) the variability of depositional environments within the complex. Contrary to past speculation, the two complexes, which have been considered to be closely related in time and space, each represent a distinctive structural and volcanic setting.

Accordingly the Skukum complex can be divided into three volcanofacies: 1) a dissected flank of a stratovolcano, 2) a downdropped vent area and 3) late felsic volcanism related to a late stage dome.

ACKNOWLEDGMENTS

This project was financed by the Exploration and Geological Services Division, Department of Indian Affairs and Northern Development, Whitehorse. I would like to thank Jim Morin at D.I.A.N.D. for suggesting the project and also the AGIP Canada Ltd. crew, especially Al Doherty for their support and discussion and for permission to examine some of their drill core. Lastly, I am grateful to Marion Craig for her assistance in the field.

FUTURE RESEARCH

The author is presently working on an MSc. thesis at the University of Manitoba under the supervision of Dr. L.D. Ayres. The present study provides an understanding of the volcanic setting of the Skukum complex and provides a basis for further detailed study. A thesis topic concentrating on the epiclastic unit has been selected for detailed study because of good exposure, lack of extensive alteration, continuity of units and, most importantly, because a detailed examination of the stratigraphic sequence will aid in the understanding of the type of volcanism which occurred in the early development of the Skukum complex.

REFERENCES

LAMBERT, M.B. 1974. The Bennett Lake cauldron subsidence complex, B.C. and Y.T.; Geol. Surv. Can., Bull. No. 227.

SMITH, M.J. 1983. Petrology and geology of high level rhyolite intrusives of the Skukum area, 105 D SW, Yukon Territory, p. 62-73 in Yukon Exploration and Geology 1981, D.I.A.N.D. 1983.

SOUTHER, J.G. 1967. Acid volcanism and its relationship to the cordillera of British Columbia, Canada; Bull. Volcanol., Vol. 30, p. 161-176.

TEMPELMAN-KLUIT, D.J. 1981. Geology and mineral deposits of southern Yukon, p. 7-31 in Yukon Geology and Exploration 1979-80, D.I.A.N.D. 1981.

WHEELER, J.O. 1961. Whitehorse map-area. Geol. Surv. Can., Memoir 312 (Includes Map 1093A).

GEOLOGY OF PYRITE-SPHALERITE-GALENA CONCENTRATIONS IN PROTEROZOIC QUARTZITE AT QUARTZ LAKE, SOUTHEASTERN YUKON

By
P. VAILLANCOURT
University of Western Ontario
London, Ontario

Introduction

The Quartz Lake sedimentary hosted lead-zinc occurrence is within an area approximately 4 km by 2 km, 70 km northeast of Watson Lake, Yukon (Figure 1). It was discovered in 1892 by prospectors from the Cassiar gold fields searching for placer gold in the Quartz Creek - Hyland River area. The prospect was rediscovered by Ken McMillan in 1948 and has been under continuous exploration since 1949.

Proterozoic rocks of the area are divided into three groups of argillite, quartzite and limestone which are, in stratigraphic succession from oldest to youngest, the Range Group, the Mine Group and the Ridge Group. There are two principal lead-zinc occurrences in rocks of the Mine Group where pyrite, sphalerite and galena occur in tabular bodies, lenses and disseminations in a predominantly quartzite host rock.

Regional Geology

Quartz Lake is in the south part of the Selwyn Basin (Figure 1). Miogeoclinal to eugeoclinal rocks of the Selwyn Basin are bounded by the Mackenzie Platform to the east and the Pelly-Cassiar Platform to the west, both of which are stable miogeoclinal assemblages. The Selwyn Basin, Mackenzie Platform and Pelly-Cassiar Platform are part of the Columbian orogen which is the eastern pericratonic province of the Canadian Cordillera.

Late Proterozoic to early Paleozoic rocks of the Columbian orogen are mature, well sorted terrigenous clastic and carbonate rocks and minor volcanic rocks, deposited in shallow water tidal flat and floodplain environments as prograded continental terrace wedges supplied from shields to the east annd northeast (Gabrielse, 1967). Quartz Lake has rocks of the Proterozoic Grit unit (Gabrielse and Wheeler, 1961) of central and southeast Yukon which is mostly siliclastic fine grained to coarse grained quartzites and conglomerates and fine grained argilliclastics with intercalated limestone. The structure is north to northeast trending, simple and continuous folds. In the west and southwest of the Selwyn Basin, complex and heterogeneous structures reflecting at least two stages of deformation result in part from the volcanism and the intrusion of granite plutons (Gabrielse and Blusson, 1969).

Geology of Quartz Lake

At Quartz Lake, the older rocks are in a northwest trending synclinorium with the younger rocks in the axis which strikes northwest (Morin, 1981). The Quartz Lake occurrence is within the synclinorium and is characterized by a cyclicity of quartzite, argillite and limestone in three groups (Figure 2).

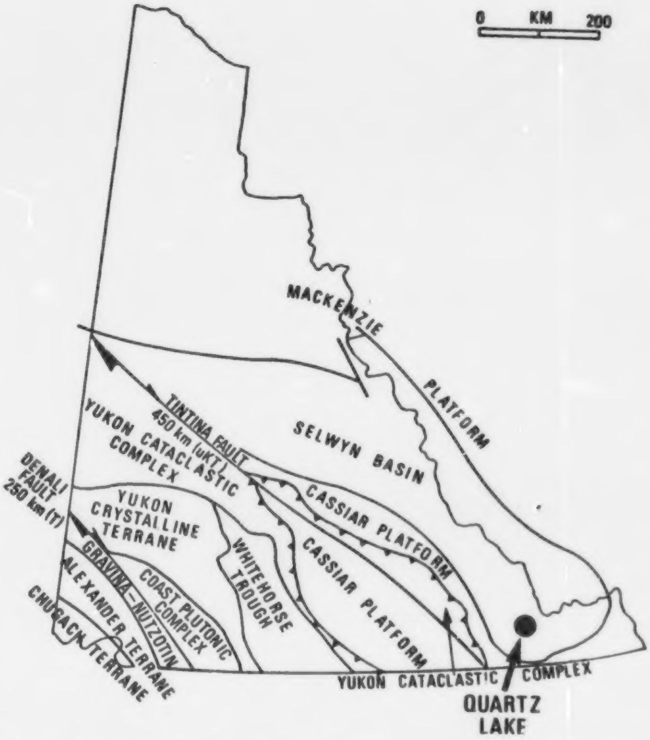


Figure 1. Main tectonic subdivisions in the Yukon with the location of Quartz Lake.

The Range Group is the oldest and most widespread, occurring east of Pyrite Creek, west of Mine Creek and north and south of the known base metal occurrences (Figure 3). It varies from 10 m to 200 m in thickness and has a base of light grey to beige quartzite which is massive and medium to coarse grained. The quartzite is overlain by grey fine grained limestone which is recessive and brittle in places. The limestone is essentially fine grained equigranular calcite and is overlain by light green argillite which is thin bedded and composed mostly of fine grained sericite and clay minerals. It has randomly distributed quartz and calcite veinlets. Black argillite is at the top of the Range Group and outcrops only in a few locations along Mine Creek and, in drill holes near Pyrite Creek which pass through rocks of the Ridge Group (Figure 3). The black argillite has an appreciable carbon content plus numerous quartz and pyrite clasts and stringers. This rock also contains some mylonitized and compacted grain intervals.

The Mine Group outcrops along and east of Mine Creek and is from 5 to 50 m thick (Figure 2). It grades from a pink and green argillite to the sulphide mineral-hosting quartzite into light green argillite and is capped by a grey limestone which is siliceous in places. The Ridge Group is the youngest rock group and outcrops along Pyrite Creek and north of Noranda Lake (Figure 3). It varies in thickness from 1 to 25 m. Quartzite at the base is massive, medium grained

Yukon Exploration and Geology 1982, p. 73-77

and light grey to white. It is overlain by a grey brittle limestone and then by a light green argillite which is thin bedded, composed of sericite and clay minerals, and distinctive by having crenulation folds.

In addition to the sedimentary sequence, dike rock was drilled below Mine Group argillite, north of Little Mountain at a depth of 144 m. The thickness of the dike is 10 m, it is dark green, friable, and has the composition of a diabase. There is also abundant granodiorite float but no outcrop, however, the Quartz Lake region has a number of plutons outcropping as well as dike swarms which may have acted as the source area for these rocks.

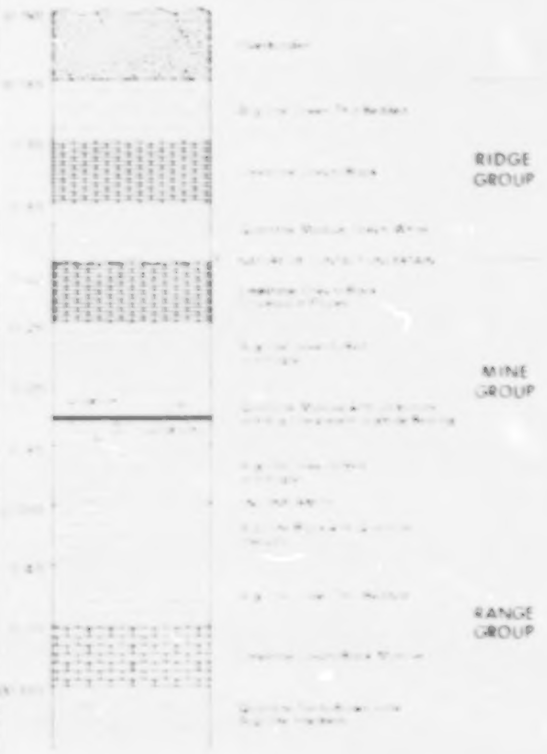


Figure 2. Generalized stratigraphic section of the Quartz Lake area. Thickness in metres.

Geology of base metal occurrences at Quartz Lake

There are two concentrations of sulphide minerals at Quartz Lake, both within the Mine Group - the Main zone and the South zone. The Main zone as outlined in outcrop and drill holes is 600 by 150 m in plan and 2 to 30 m thick striking northwest and dipping east. It is a northwest trending elongate body of 1.1 million tonnes of 8.32% Zn, 4.13% Pb and 61.7 g/tonne Ag in near massive pyrite, sphalerite, and galena stratabound within quartzite and argillite of the Mine Group.

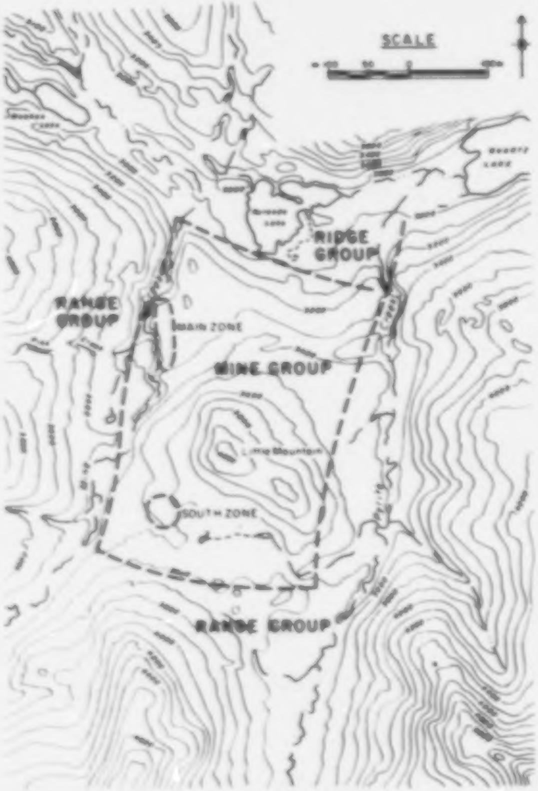


Figure 3. General geologic map of the Quartz Lake area.

The South zone, 300 m to the south, does not outcrop but is outlined by drill holes as 100 m by 75 m and up to 10 m thick of 0.4 million tonnes of 1.72% Zn, 9.34% Pb and 214 g/tonne Ag as dispersed and lensoid sphalerite, galena and pyrite in quartzite and argillite at approximately the same stratigraphic position as the Main zone. The distribution of sulphide minerals therefore indicates a sphalerite-rich Main zone and a galena-rich South zone.

The sulphide-bearing section of the Mine Group (Figure 4) has a red to green argillite at its base which grades into quartzite to a massive pyrite unit and then back to quartzite and argillite. The basal red and green argillite which can be 1 to 10 m thick has only disseminated pyrite and veinlets but contains more sphalerite and galena in lenses and veinlets at the top of the sequence. The argillite interbeds with and grades into quartzite which is the main host to pyrite, galena and sphalerite. Within the quartzite,

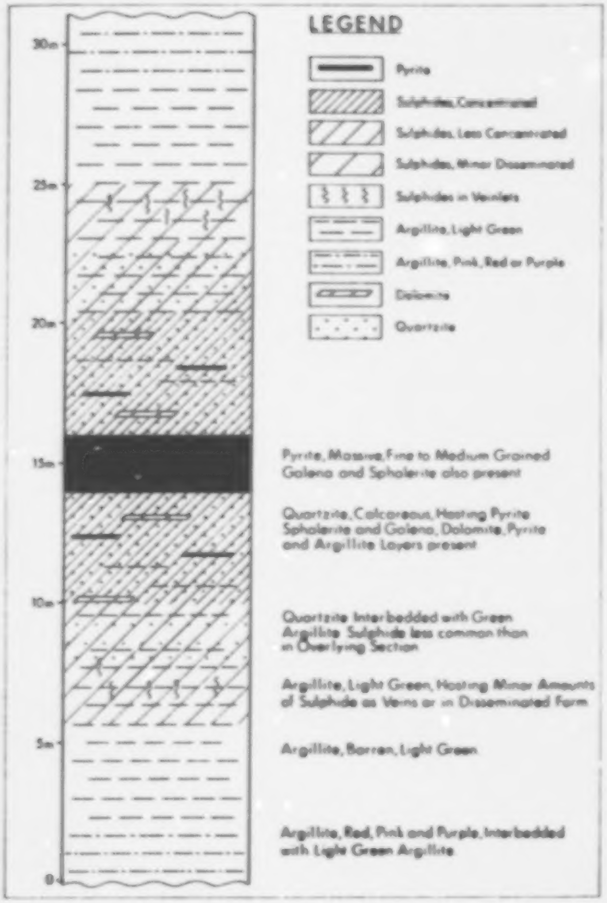

LEGEND
Pyrite
Sulphides, Concentrated
Sulphides, Less Concentrated
Sulphides, Minor Disseminated
Sulphides in Veinlets
Argillite, Light Green
Argillite, Pink, Red or Purple
Dolomite
Quartzite
30m
25m
20m
15m
10m
5m
0
Pyrite, Massive, Fine to Medium Grained Galena and Sphalerite also present
Quartzite, Calcareous, Hosting Pyrite Sphalerite and Galena, Dolomite, Pyrite and Argillite Layers present
Quartzite Interbedded with Green Argillite Sulphide less common than in Overlying Section
Argillite, Light Green, Hosting Minor Amounts of Sulphide as Veins or in Disseminated Form
Argillite, Barren, Light Green
Argillite, Red, Pink and Purple, Interbedded with Light Green Argillite

Figure 4. Stratigraphic section through the base metal-bearing part of the Mine Group.

1 to 10 m thick, sulphide mineral distribution includes other less common sulphide and sulphosalt minerals, the most important ones being boulangerite arsenopyrite and tetrahedrite. The sulphide mineral morphology varies from discontinuous pods and lenses to discordant veins to disseminations. Sphalerite occurs as irregular masses and patches, minor veins and fracture filling in association with other sulphide minerals and as intergrowths or inclusions in pyrite. It is also very common for the sphalerite to occur interstitial to quartz grains as spheroids with concentric zoning and polysynthetic twinning (Figure 5a,b). Galena is along grain boundaries as intergrowths with quartz or sulphide minerals, in veinlets and along cleavage planes. Galena also occurs as granular aggregates or sub spherical spots to clusters in the interstices of quartzite and calcareous quartzite (Figure 5c). In the South zone, galena also commonly occurs with black argillite.

The most important aspect of the Mine Group quartzite is the presence of calcite and siderite which are interstitial grains and act as a cement for sulphide or quartz grains. Where present with the sulphide minerals, the carbonates are commonly manganiferous (up to 17%); generally, a high manganese content is sympathetic with a high iron content.

There are concordant and discordant dolostone lenses which contain galena. They are usually in quartzite but may also be in argillite. These lenses which are form 0.5 to 1 m thick and extend along strike for 5 to 10 m are more common in the galena-rich South zone than the sphalerite rich Main zone. The quartzite grades up into a layer of 80 to 90% massive pyrite with 10 to 20% combined sphalerite and galena (Figure 5d). The pyrite can be up to 5 m thick but pinches and swells along strike. The pyrite may have sedimentary features such as graded bedding or cross bed sets and occurs as well developed pyritohedrons which overprint or pseudomorph quartz grains. It is common to find other sulphide minerals as inclusions or intergrowths within pyrite. Massive pyrite grades upward into quartzite and green and red argillite. This sequence is capped by a barren grey limestone.

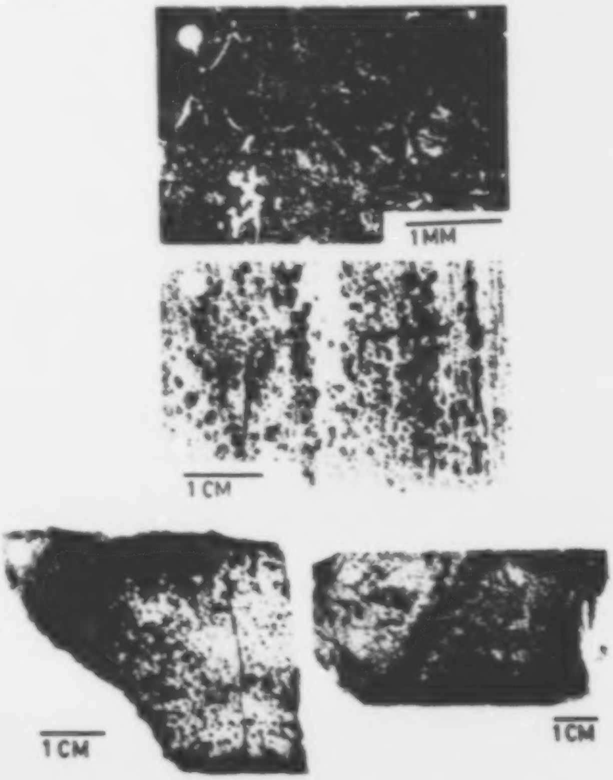

1MM
1 CM
1 CM
1CM

Figure 5. a) Photomicrograph of concentrically zoned sphalerite from Quartz Lake, b) Photograph of thin section slide with disseminated spheroidal sphalerite in quartz groundmass, c) Photograph of disseminated galena as sub-spherical spots and clusters in calcareous quartzite and d) Photograph of massive pyrite hosting sphalerite (dark grey).

Sulphide mineral distribution at Quartz Lake is erratic in detail. The stratigraphy of the Mine Group in any given location is likely to vary from the idealized sequence. It is very common to find argillite interbedded with quartzite or pyrite or for the sulphide mineral-bearing zones to occur over very short thicknesses. Discontinuous horizons or rapid facies changes laterally are characteristic and deviation from conformability is common to the point where there is no trace of stratification within the ore itself. In addition, the sulphide mineral occurrences are never as extensive as the facies that host them.

Physicochemical Conditions of Sulphide Mineral Emplacement

Filling temperature determinations of primary fluid inclusions in sphalerite and quartz in the sulphide zone range from 185 to 195 degrees C with a median of 192. These represent minimum temperatures uncorrected for pressure. Filling factors determined on geometrically regular inclusions are 0.99 ± 0.06. The liquid-vapour ratios in all inclusions examined are uniform and no evidence of boiling was observed. No daughter crystals were detected in primary liquid inclusions and hence the hydrothermal fluids were less than 25% NaCl equivalent (Roedder, 1967, 1979). For salinities at 5% and 25% NaCl equivalent and a filling factor of 0.99 based on gas to liquid ratios, the density of the fluid was 1.08 and 1.23 g/cm^3, respectively.

Eleven galena samples were analyzed by Dr. Colin Godwin at the University of British Columbia for relative abundances of lead isotopes. There is very little variation in their lead isotopic composition: $^{206}Pb/^{204}Pb$ averages 20.185, $^{207}Pb/^{204}Pb$ averages 15.823 and $^{208}Pb/^{204}Pb$ averages 39.947. These ratios are those of very radiogenic lead.

Oxygen isotope analyses by Dr. Robert Kerrich at the University of Western Ontario on quartz from within as well as beyond the sulphide mineral bearing zone have a relatively uniform $\delta^{18}O$ of 16.08 to 17.57‰, signifying that the $\delta^{18}O$ fluid and fluid temperatures were also relatively uniform throughout the zones of the sulphide mineral occurrence. The oxygen isotope composition of fluids from which sulphide minerals were precipitated is estimated at 2.3 to 3.8‰, based on the $\delta^{18}O$ quartz, a corrected temperature of 192^0 C - 20 to 192^0 + 40, and the quartz-water fractionation equation of Clayton et al.(1972).

Interpretation

At Quartz Lake, cyclicity of deposition of argillite, quartzite and limestone is expressed from the basal Range Group through the overlying Mine Group to the Ridge Group. The lateral extent, texture and uniformity of composition of all the rock types suggest deposition in a tectonically stable area with shallow marine conditions such as an epicontinental sea. Quartzite in the Range, Mine and Ridge Groups is generally clean and medium to coarse grained, indicating thorough clear water flushing of sands in a near shore tidal beach environment. The limestone is also similar in all three groups and is distinguished only by minor textural features. The dark colour, and fine grain size indicate the depositional environment was restricted anaerobic waters which were stagnant and much lower in energy than the conditions for quartzite deposition. Argillite in the area is extensive, characterized by fine grain size, light green color and sericite. The few quartz particles indicate very little near shore influence and that deposition was slow and regular in quiet water. In general, the cyclicity and nature of the rock types indicates sedimentation in fairly shallow water, not far from a land-marine water interface; it is possible that sedimentation alternated between transgressive and regressive clastic deposition and was periodically restricted to permit limestone formation.

The stratabound nature of the sulphide minerals that are now mostly in quartzite indicates they were emplaced predominantly in interconnected pore spaces in sands. The largest sulphide mineral concentrations, which are parallel to parting surfaces and interstitially distributed between quartz grains suggest that the control to sulphide mineral deposition was permeability and porosity as well as the alternation of sand and shale which confined fluid flow. The sulphide mineral assemblage of pyrite, sphalerite, galena and sulphosalts as well as the trace metal content of the sulphide minerals are characteristic of low to moderate temperature sedimentary deposits (Vaughan, 1976) under moderate loading, leading to minor pressure solution but not extensive recrystallization. Mutual relationships of the sulphide minerals suggest that they formed by a series of pulses of metal-bearing fluids which were mainly zinc-rich with a lesser Eh in the Main zone and lead-rich with a greater Eh in the South zone (Barnes and Czamanske, 1967, Rickard et al., 1979).

Five fluid reservoirs can be identified on the basis of their $\delta^{18}O$ signatures: these are marine, meteoric, magmatic, metamorphic, and formation brines which may be derived from marine or meteoric waters (Taylor, 1974). Given the marine environment and the low temperature of formation, the fluid $\delta^{18}O$ of 2-3‰ at Quartz Lake is meteoric water that underwent a positive shift of +2 to +3‰ during low temperature circulation through very ^{18}O-rich sediments.

Based on the fluid density of 0.93g/cm^3 and the distribution of fluid inclusions in large grains, the rate of movement of the fluids was probably slow. Given these conditions, the fluids could migrate freely and form discontinuous pods and semi-massive sections. The relatively low salinity of the fluids suggests there was little influence from saline brines or evaporite source rocks. With a shallow depth of burial, mechanical compaction was the dominant porosity reducing process, although pressure solution, secondary overgrowths and cementation were effective as well.

Genesis of the Quartz Lake Occurrence

The depositional setting and evolution of Quartz Lake is shown in figure 6. During Late Proterozoic time, sediments were deposited on the North American craton above a granitic basement in an epeirogenic sea near the continental margin where stable tectonic conditions prevailed. With progressive weathering of the continent, meteoric groundwaters migrated through the granitic basement as part of the hydrologic cycle.

Base metals were carried in a warm slightly acidic, slightly saline fluid. Fluids circulated through fractured basement and later through onlapping porous permeable sandstone. Precipitation of sulphide minerals occurred as the slightly saline brine mixed with seawater and formational water containing sulphate in sandstone. Deposition was a result of a combination of falling temperature and increasing pH and Eh as the fluids mixed with cooler more oxidized waters (Large, 1977) and waters that moved hydrodynamically from overlying and underlying sediment.

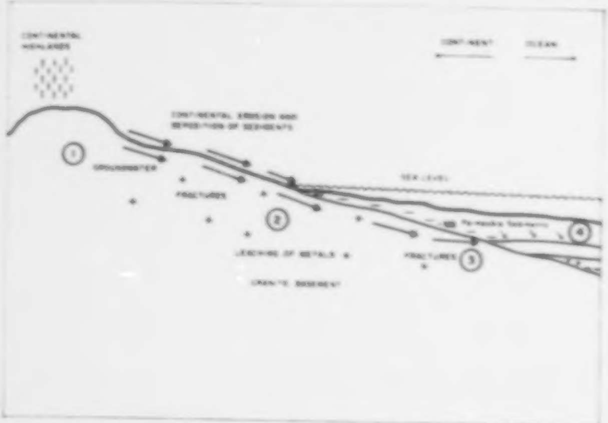


Figure 6. Depositional environment and genetic sequence for the source, transport and deposition of metal-bearing fluids at Quartz Lake. Length of section is approximately 100 km, vertical scale is greatly exaggerated.

1. Erosion of highlands and initiation of groundwater circulation through the granite basement.
2. Groundwater circulates through the basement and leaches metals.
3. Slightly saline brine moves into onlapping sediment and particularly permeable sandy horizon. This flow may be assisted by fractures.
4. Precipitation of sulphide minerals as metalliferous mix with sulphate-rich seawater and formation waters in sandy horizon. Arrows indicate hydrodynamic movement of waters from less permeable underlying and overlying sediments.

LIST OF REFERENCES

BARNES, H.L. and CZAMANSKE, G.K., 1967. Solubilities and transport of ore minerals; in Geochemistry of Hydrothermal Ore Deposits, First edition, by H.L. Barnes, ed., New York: Holt, Rinehart and Winston, p. 334-381.

CLAYTON, R.N., O'NEIL, J.R. and MAYEDA, T.K., 1972. Oxygen isotope exchange between quartz and water; Journal of Geophysical Research, Vol. 77, p. 3057-3067.

GABRIELSE, H., 1967. Tectonic evolution of the northern Canadian Cordillera; Can. Jour. of Earth Sci., Vol. 4, pp. 271-298.

GABRIELSE, H. and WHEELER, J.O., 1961. Tectonic framework of southern Yukon and northwestern British Columbia; Geol. Surv. Can. Paper 60-24, 37 pp.

GABRIELSE, H. and BLUSSON, S.L., 1969. Coal River map area, Yukon Territory and district of Mackenzie; Geol. Surv. Can. Paper 68-38, 22 pp.

GODWIN, C.I., Personal Communication, 1981.

KERRICH, R., Personal Communications, 1981 and 1982.

LARGE, R.R., 1977. Chemical evolution and zonation of massive sulfide deposits in volcanic terrains; Econ. Geol., Vol. 72, 1977, pp. 549-572.

MORIN, J.A., 1981. The Macmillan deposit- a stratabound lead-zinc-silver deposit in sedimentary rocks of Upper Proterozoic age, p.107-112 in DIAND, 1982, Yukon Geology and Exploration 1979-80, 364 pp.

RICKARD, D.T., WILLDEN, M.Y., MARINDER, N.E. and DONNELLY, T.H. 1981. Studies on the genesis of the Laisvall sandstone lead-zinc deposit, Sweden - A reply; Econ. Geol., Vol. 74, pp. 2052-2060.

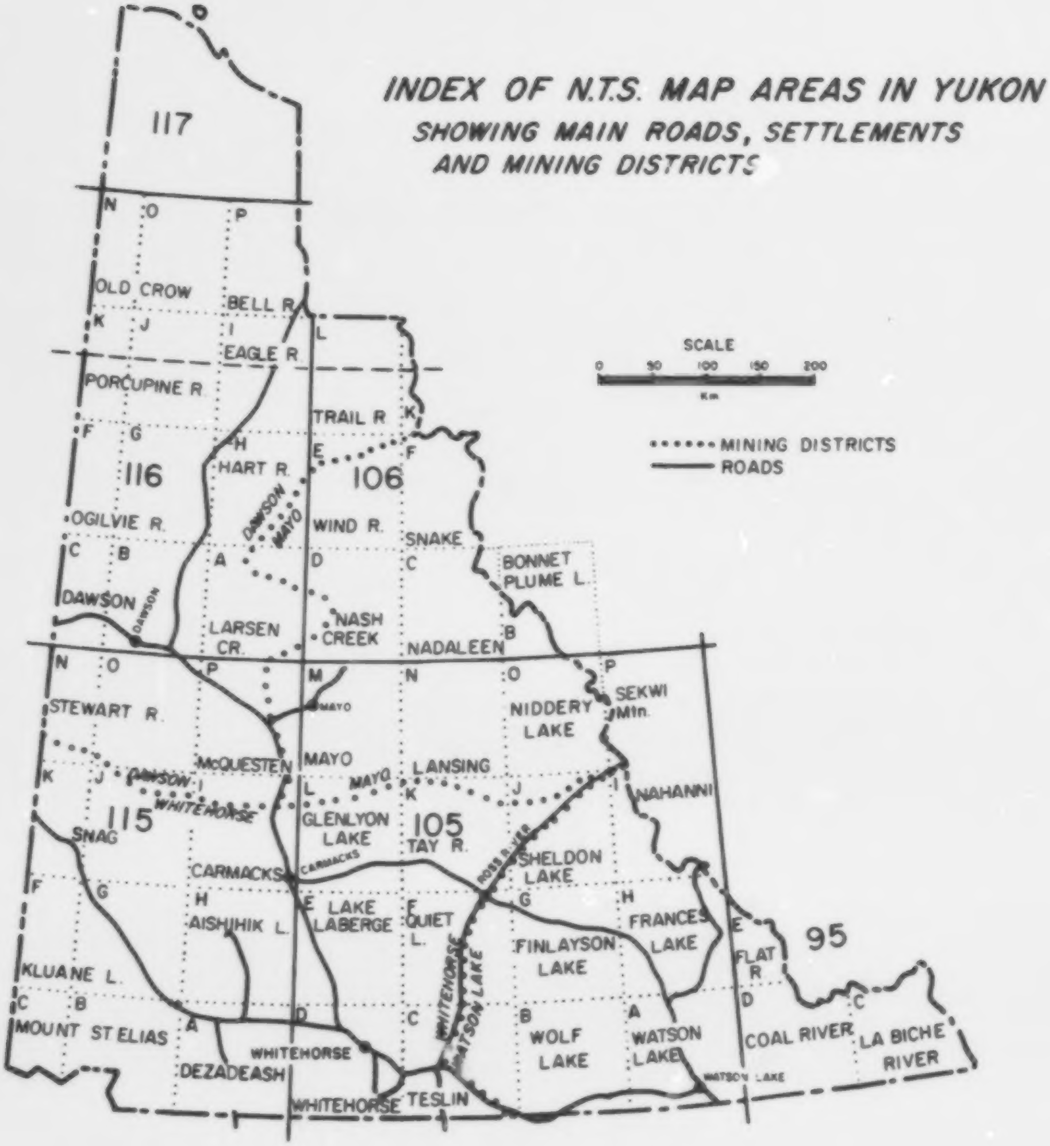
ROEDDER, E., 1967. Fluid inclusions as samples of ore fluids in Geochemistry of Hydrothermal Ore Deposits, H.L. Barnes, editor, Rinehart and Winston, New York, pp. 515-574.

1979. Fluid inclusions as samples of ore fluids in Geochemistry of hydrothermal ore deposits, Second edition, H.L. Barnes, editor, Wiley, pp. 684-737.

TAYLOR, H.P., 1974. The application of oxygen and hydrogen isotope studies to problems of hydrothermal alteration and ore deposition; Econ. Geol., Vol. 69, pp. 843-883.

THOMPSON, R.I. and PANTELEYEV, A., 1976. Stratabound mineral deposits of the Canadian Cordillera. in Wolf, K.H. (ed), Handbook of stratabound and stratiform ore deposits, Elsevier, Amsterdam, Chap. 2, pp. 37-108.

VAUGHAN, D.J., 1976. Sedimentology, Geochemistry and Mineralogy of the Sulfides of Lead, Zinc, and Copper and Iron and their Occurrence in Sedimentary Ore Deposits, in Handbook of Stratabound and Stratiform Ore Deposits, Principles and General Studies, Vol. 2, Geochemical Studies by K.H. Wolf, ed., New York: Elsevier Scientific Publishing Company, pp. 317-363.



INDEX OF N.T.S. MAP AREAS IN YUKON SHOWING MAIN ROADS, SETTLEMENTS AND MINING DISTRICTS

117
N
O
P
OLD CROW
BELL R.
K
J
I
L
EAGLE R.
PORCUPINE R.
TRAIL R.
K
F
G
H
E
F
116
HART R.
106
DAWSON
MAYO
OGILVIE R.
WIND R.
SNAKE
C
B
A
D
C
BONNET PLUME L.
DAWSON
DAWSON
LARSEN CR.
NASH CREEK
B
NADALEEN
N
O
P
M
N
O
P
MAYO
STEWART R.
NIDDERY LAKE
SEKWI Mtn.
McQUESTEN
MAYO
LANSING
K
J
DAWSON
I
L
MAYO
K
J
I
WHITEHORSE
115
105
NAHANNI
SNAG
GLENLYON LAKE
TAY R.
CARMACKS
CARMACKS
ROSS RIVER
SHELDON LAKE
F
G
H
E
F
G
H
AISHIHIK L.
LAKE LABERGE
QUIET L.
FINLAYSON LAKE
FRANCES LAKE
E
95
KLUANE L.
WHITEHORSE
WATSON LAKE
FLAT R.
C
B
A
D
C
B
A
D
C
MOUNT ST ELIAS
WOLF LAKE
WATSON LAKE
COAL RIVER
LA BICHE RIVER
WHITEHORSE
DEZADEASH
WATSON LAKE
WHITEHORSE
TESLIN
SCALE
0
50
100
150
200
Km
MINING DISTRICTS
ROADS

SUMMARIES OF ASSESSMENT WORK,
DESCRIPTION OF MINERAL PROPERTIES,
AND MINERAL CLAIMS STAKED IN 1982

The reports and summaries of work done are keyed to a set of maps which are reductions of the 1:250,000 topographic maps of Yukon. The maps show three features in relation to the topography. They include the location of known mineral occurrences with a key naming them. They also give the most recent literature reference describing the occurrence. The maps also show the areas covered by mineral and placer claims in good standing and the areas covered by leases to prospect for placer and coal. Mineral claims staked during 1982 are distinguished from those located earlier to emphasize areas that will focus future exploration. The claim information derives from the maps of the Supervising Mining Recorder, D.I.A.N.D., Whitehorse. Finally, the maps indicate secondary access roads and winter tote trails.

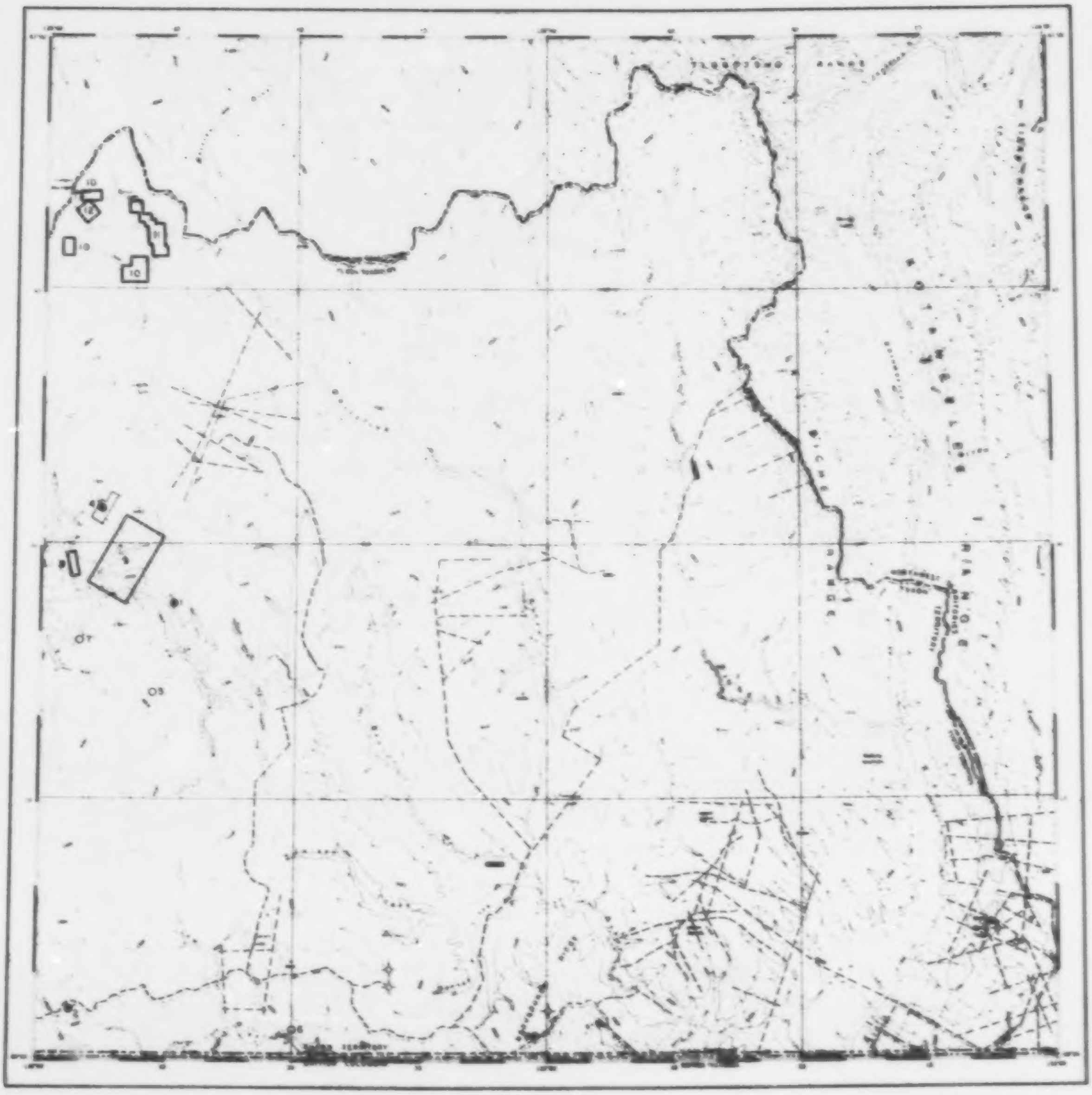
The maps are ordered according to the National Topographic System and the work summaries and records of new staking also follow this order. Thus, each map precedes a section describing exploration activity within that area. Each report on a property includes the National Topographic System reference number keying it to the relevant 1:50,000 scale map-area. The number beside the NTS relates to the property location on the index map. Latitude and longitude further define the location. The name reported is that given by the original discoverer or staker; it may not match that of the present claims. Repetition of names is avoided by assigning a unique name where the claim name is not diagnostic.

Further information concerning the properties may be obtained from several sources. The National Mineral Inventory (NMI) is maintained by Department of Energy, Mines and Resources as a looseleaf file of property descriptions grouped according to the NTS system and within that according to commodity. A copy of the inventory is available for consultation at the D.I.A.N.D. Geology office in Whitehorse.

The Yukon Land Resource and Inventory Atlas contains a series of 1:250,000 maps with different resources plotted on them. The material was compiled by F.F. Slaney and Company Limited through a contract with D.I.A.N.D. and Y.T.G. Their subject categories include the following: physical resources - meteorology, hydrology, areas of bedrock geology studies. Quaternary geoscience, pedology; demographic resources - land status, settlement patterns, tourism and recreation services, archaeological resosources, historic resources, transportation, native peoples: non-renewable resources - economic minerals, industrial surficial deposits, oil and gas: renewable resources - hydroelectric, forestry, vegetation, agriculture, fisheries resources, ungulates, furbearers and large carnivores and birds. However, the mineral related data is complete up to 1974 only. A copy of this Inventory is available for consultation at the D.I.A.N.D. Geology office in Whitehorse.

The Northern Cordillera Mineral Inventory is an accurate and thorough private system maintained by Archer, Cathro and Associates (1981) Ltd. and is available from them on a fee and subscription basis. Their inventory was the prime source of data for the economic mineral section of the above mentioned Yukon Atlas and likewise the Atlas maps were the initial foundation for the maps presented in our 1979-80 Yukon Geology and Exploration report.

95 C



LA BICHE RIVER

YUKON TERRITORY · NORTHWEST TERRITORIES

Kilometres
Miles

[illegible]
[illegible]
Mineral Claims in good standing (Jan. 1983) and staked before Jan 1983
Mineral Claims staked in 1983
Placer Leases in good standing (Jan. 1983)
Placer Claims in good standing (Jan. 1983)
CEL Coal Exploration Licence
CML Coal Mining Lease
Tote Trail
Winter Road
Oil or Gas Well
Airstrip

LA BICHE RIVER MAP-AREA (NTS 95 C)

General Reference: GSC Map 1380A by: R.J.W. Douglas, 1976.

NO.	PROPERTY NAME	REFERENCE
1	POOL	Barium Vein Occurrence
2	TROPICAL	Barium-Lead-Zinc Occurrence
3	BEAVERCROW	D.I.A.N.D. Files, Log of SOBC Shell Beavercrow Well K-2 (Drilled 1963)
4	TING	D.I.A.N.D. (1981, p. 131)
5	VISTA	D.I.A.N.D. (1982, p. 83)
6	DUFFY	D.I.A.N.D. (1982, p. 83)
7	THOR	D.I.A.N.D. (1982, p. 83)
8	TRANZ	This Report
9	BEAV	This Report
10	DEEK	This Report
11	MARS	This Report
12	RUSH	This Report

TRANZ
Archer, Cathro and Associates (1981) Limited
Geochemical Target
95 C 5 (8)
(60°29'N,125°56'W)

Claims: TRANZ (14)

Current Work and Results:

The claims are underlain by Road River Formation shale and in 1982, reconnaissance scale mapping and geochemical surveying programs were conducted.

******

MARS
Archer, Cathro and Associates (1981) Limited
Geochemical Target
95 C 13 (11)
(60°49'N,125°47'W)

Claims: MARS (49)

Current Work and Results:

Rocks of the Lower Earn Group underlie the claims and in 1982, reconnaissance scale geological mapping and geochemical sampling programs were carried out on the claims.

******

RUSH
Archer, Cathro and Associates (1981) Limited
Geochemical Target
95 C 13 (12)
(60°50'N,125°55'W)

Claims: RUSH (16)

Current Work and Results:

The claims are underlain by rocks of the Lower Earn Group and in 1982, reconnaissance scale mapping and geochemical surveying were carried out.

******

1982 MINERAL CLAIMS STAKED

TRANZ
Archer,Cathro and Associates (1981) Limited
95 C 5 (8)
(60° 28'N,125°56'W)

Claims 1982: TRANZ 1-14

BEAV
Stubenberg
95 C 5, 12 (9)
(60°29'N,125°50'W)

Claims 1982: BEAV 37-180

DEEK
Kidd Creek Mines Limited
95 C 13 (10)
(60 46' - 60 51'N, 125°49'- 125°55'W)

Claims 1982: DEEK 1-10, 36-43, 48-71, 101-112

MARS
Archer, Cathro and Associates (1981) Limited
95 C 13 (11)
(60°48'N,125°47'W)

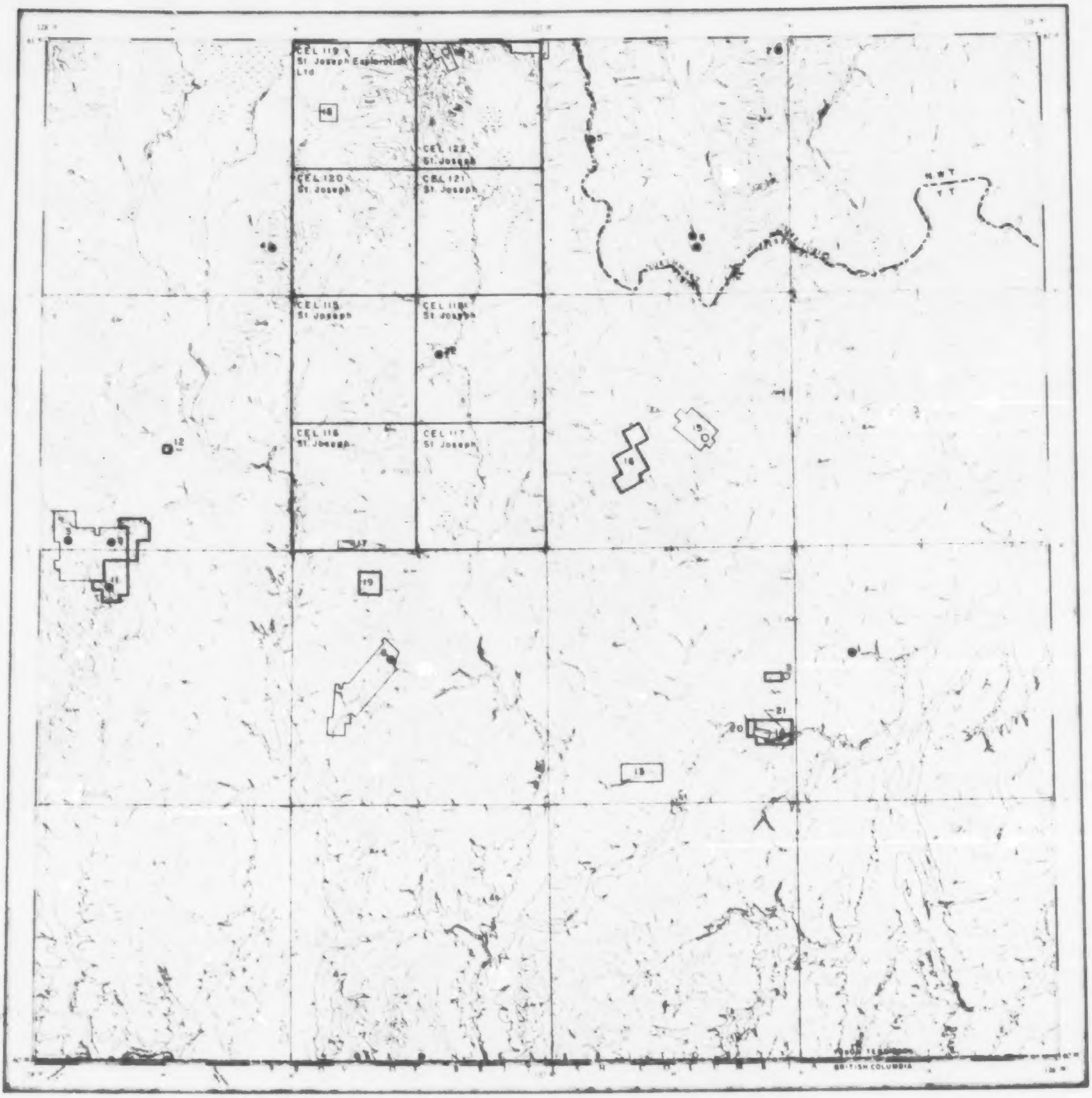
Claims 1982: MARS 1-49

RUSH
Archer, Cathro and Associates (1981) Limited
95 C 13 (12)
(60°49'N,125°55'W)

Claims 1982: RUSH 1-16

******

95 D


CEL 119
St. Joseph Exploration Ltd
CEL 122
St. Joseph
CEL 120
St. Joseph
CEL 121
St. Joseph
CEL 115
St. Joseph
CEL 118
St. Joseph
CEL 116
St. Joseph
CEL 117
St. Joseph
N.W.T.
Y.T.
YUKON TERRITORY
BRITISH COLUMBIA
12
13
15
16
17
18
19
20
21

COAL RIVER

YUKON TERRITORY – NORTHWEST TERRITORIES

Kilometres 5 0 5 10 15 20 25 30 Kilometres

●	Mineral Deposit or Occurrence see Key on facing page	▬	Placer Leases in good standing (Jan 1983)	- - - -	Tote Trail
○	Unmineralized Target	▬	Placer Claims in good standing (Jan 1983)	▬	Drivable Road
▭	Mineral Claims in good standing (Jan 1983) and staked before Jan 1982	CEL	Coal Exploration License	✧	Oil or Gas Well
▭	Mineral Claims staked in 1982	CML	Coal Mining Lease	▬	Airstrip

COAL RIVER MAP-AREA (NTS 95 D)

General Reference: GSC Map 11-1968 by: H. Gabrielse, 1969.

NO.	PROPERTY NAME	REFERENCE
1	GUSTY	Gabrielse & Blusson (1969, p. 16)
2	MEL-HOSER	This Report
3	McMILLAN	Vaillecourt (This Report)
4	CHU	Skarn Lead-Zinc Occurrence
5	GABE	Gabrielse & Blusson (1969, p. 16), D.I.A.N.D. (1981, p. 133)
6	LAST	Lambert (1969, p. 21-23)
7	STONEMARTEN	Lambert (1969, p. 21-23)
8	PORKER	This Report
9	WOLF	D.I.A.N.D. (1982, p. 86)
10	SPORK	D.I.A.N.D. (1981, p. 133); D.I.A.N.D. (1982, p. 87)
11	CUZ	This Report
12	PLAY	This Report
13	LOOTZ	This Report
14	JT	This Report
15	OUDDER	This Report
16	DK	This Report
17	STAR	D.I.A.N.D. (1982, p. 86)
18	HERPES	This Report
19	QUO	This Report
20	LOBO	This Report
21	SPRUCE	This Report
22	ROCK RIVER COAL	This Report

MEL-HOSER

Sulpetro Minerals Limited

Lead,Zinc,Barite
95 D 6 (2)
(60°23'N,127°20'W)

Reference: D.I.A.N.D. (1982, p.85,87).

Claims: 59 claims of MEL, JEAN, WET, SOV; 96 claims of JONI, KELI, EDY, HOSE, JERI, OTT, RALFO, SIN, MUMBO, TOMI, YANG, CHUNGO, BOZ.

Source: Summary by P. Watson from assessment report 091077 by D.C. Miller and J.D. Blanchflower.

History:

Ninety-six claims (JONI to BOZ claims) were added to the MEL claim block in 1981 to cover additional mineralized occurrences located 7 km northeast of the MEL main zone.

Description:

The new claims are underlain by a series of Lower Cambrian to Middle Ordovician sedimentary rocks. The oldest unit is represented by grey dolomite, grey sandstone, grey thin-bedded limestone and brown siltstone at the MEL-EAST ZONE (new zone), while at the MEL zone, it is mainly calcareous shale and siltstone.

An alteration zone of silicification and dolomitization, 10 m or more thick, occurs near the top of the next unit, a cryptocrystalline limestone, at the MEL-EAST and marks the base of the mineralized zone. At MEL, the dolomite zone occurs at the base of the limestone unit, approximately 140 m below the mineralized zone.

At MEL-EAST, mineralization consists of smithsonite blebs in silicified limestone at the top of the limestone unit. Mineralization is found in 3 outcrops over a strike length of 125 m and up to a width of 2 m. The mineralized zone at MEL is up to 15 m thick and 900 m long and contains sphalerite, galena and barite.

Rabbitkettle Formation calcareous phyllite grading into wavy banded silty limestone overly the mineralized unit.

The youngest material mapped in the area is thick-bedded dolomite with chert nodules that may be part of the Sunblood Formation.

The MEL-EAST zone appears to lie on the east limb of an overturned syncline.

Current Work and Results:

In 1982, a soil geochemistry program was conducted on JONI and KELI claims and the new claim block was mapped at a reconnaissance level. A total of 247 soil samples were collected and analyzed for

Pb, Zn and Ag.

Moderately anomalous values were noted in soil samples over a length of 2,100 m along the trend of the mineralized zone. Samples containing greater than 1,200 ppm Zn or 168 ppm Pb were considered definitely anomalous. Zn and Pb anomalous values showed a good correspondence. Silver values ranged up to 1.3 ppm Ag and correlated with Pb values.

The geochemical response of MEL-EAST is weaker and less extensive than the response at MEL. The average of assays of the three showings at MEL-EAST was 9.6% Zn, less than 0.1% Pb, 1.03 g Ag/t and 0.03% Ba.

******

PORKER — Geochemical Target
Archer, Cathro and Associates (1981) Limited
95 D 5,12 (8)
(60°32'N,127°49'W)

Reference: Sinclair et al (1976, p.155,156).

Claims: QUIVER 1-40

Source: Summary by P. Watson from assessment report 091425 by A.R. Archer.

History:

The QUIVER claims were staked to the east of the PORKER claims in 1982 to cover an area of anomalous arsenic geochemistry.

Description:

The property lies 70 km northeast of Watson Lake. It is underlain by grit, quartzite and quartz pebble conglomerate of the Hadrynian Grit Unit, which is locally overlain by Cambrian-Ordovician(?) silty limestone and calcareous shale of the Rabbitkettle Formation.

Current Work and Results:

In 1982, 12 stream sediment, 761 soil and 22 rock samples were collected and analyzed for Au, As, Bi, Sb, Pb, Cu, W and Mn.

******

CUZ — Gold Vein
Archer, Cathro and Associates (1981) Limited
95 D 5 (11)
(60°28'N,127°52'W)

References: D.I.A.N.D. (1982, p.85,87).

Claims: CUZ 1-60

Source: Summary by P. Watson from assessment report 091427 by A.R. Archer.

History:

This property lies to the south of the McMILLAN (#3) property. The northern part of the claim group was previously part of the SN (1954) and the PORKER (1973) claim blocks. The CUZ claims were staked in 1981 to cover anomalous As values in stream sediment samples. Fourteen claims were added in 1982 to cover the extension of an Au soil anomaly.

Current Work and Results:

During the 1982 geochemical program, 22 stream sediment, 865 soil and 59 rock samples were collected. The property is underlain by Hadrynian Grit Unit.

******

LOOTZ
SEREM Limited
95 D 7 (13)
(60°17'N,126°40'W)

References: D.I.A.N.D. (1982, p.85,86,87).

Claims: LOOTZ 1-40

Source: Summary by P. Watson from assessment report 091073 by M.A. Stammers.

Description:

The property is located 130 km east-northeast of Watson Lake. It is underlain by a package of Paleozoic sedimentary and volcanic rocks. These include; Lower Cambrian(?) to Devonian silty limestone and volcanic rocks; dolomite, sandstone and conglomerate; and Road River Formation limestone, chert and shale.

Current Work and Results:

The claims were staked in 1981. In 1981 and 1982, prospecting, geochemical sampling and geological mapping programs were conducted.

******

JT — Geochemical Target
R.H. Seraphim Engineering Ltd.
95 D 7 (14)
(60°17'N,126°35'W)

Reference: D.I.A.N.D. (1982, p.85,87).

Claims: JT 1-8

Source: Summary by P. Watson from assessment report 091079 by R.H. Seraphim.

History:

The claims were staked in 1981 to cover two brown ocher spring deposits containing up to 1% Zn.

Description:

The area is underlain by Road River and Besa River Formation rocks. On the property, outcrops of grey-black limestone containing carbonate stringers were mapped. Float of quartzite, limestone, shale and grit was found near the showing and minor galena in a quartz stringer was found in the creek bed.

Current Work and Results:

Geological mapping in the vicinity of the springs and geochemical sampling programs were conducted in 1982. Thirty-four stream sediment or soil samples were collected. Maximum values returned were 50 ppm Cu, 38 ppm Pb and 1,650 ppm Zn, except for the 1% Zn at the spring.

******

OUDDER
Archer, Cathro and
Associates (1981) Limited

Geochemical Target
95 D 10 (15)
(60° 37'N,126° 42'W)

References: D.I.A.N.D. (1982, p.85,86,87).

Claims: OUDDER 1-22; FAR 1-16; WAY 1-16

Source: Summary by P. Watson from assessment report 091019 by C.A. Main and R.J. Cathro.

History:

The claims were staked in 1981, following a soil and stream sediment panning program.

Description:

The claim block covers a small hornblende-biotite granodiorite stock that has intruded middle to lower Paleozoic limestone, siltstone and chert. These sediments are part of the Road River and Sunblood Formations. Float of unmineralized garnet-diopside skarn was found near the contact.

Current Work and Results:

Stream sediment and soil samples were collected on the property and a ground magnetometer survey was conducted. Samples were split, one part retained for geochemical analysis and the remainder panned and lamped for tungsten minerals. Streams draining from the intrusive contact contain anomalous amounts of scheelite.

A total of 418 samples were analyzed for W and Mo and 215 were also analyzed for Au. Values greater than 10 ppm W, 3 ppm Mo or 10 ppb Au were considered anomalous. The main W anomaly occurs near the skarn float, upstream of the location of panned samples containing anomalous amounts of scheelite. Four areas anomalous in Mo were outlined. Magnetometer highs may be related to magnetite in skarn or chert.

******

DK
R.H. Seraphim Engineering Ltd.

Geochemical Target
95 D 10 (16)
(60° 35'N,126° 50'W)

Reference: D.I.A.N.D. (1982, p.85,87).

Claims: DK 1-64

Source: Summary by P. Watson from assessment report 091080 by R.H. Seraphim.

History:

The claims were staked in 1981 to cover an area of anomalous stream sediments located during a reconnaissance program.

Description:

The area is underlain by rocks of the Sunblood, Road River and Besa River Formations.

Current Work and Results:

Approximately 450 grid soil samples were collected and analyzed for Cu, Pb and Zn. One Cu value of 265 ppm was reported; all others were less than 80 ppm Cu. Similarly, one Pb value of 52 ppm was found; all others were less than 40 ppm Pb. Zinc values up to 6,800 ppm Zn were reported and are probably derived from the Road River Formation rocks.

******

HERPES
Archer, Cathro and
Associates (1981) Limited

Geochemical Target
95 D 14 (18)
(60° 56'N,127° 25'W)

References: D.I.A.N.D. (1982, p.85,87).

Claims: HERPES 1-16

Source: Summary by P. Watson from assessment report 091021 by C.A. Main and R.J. Cathro.

History:

These claims were staked in 1981 to cover the apparent source of stream sediments containing anomalous amounts of scheelite, located near the contact between a Cretaceous intrusion and Hadrynian(?) limestone. The property was staked for CUB Joint Venture (Brinco Mining Limited, formerly Cassiar Asbestos Corporation Limited; Highland Crow Resources Limited; Union Carbide Canada Limited).

Description:

The property is located on the east side of the Coal River valley, 14 km west of the Yukon Territory - Northwest Territories border and 140 km northeast of Watson Lake. No outcrop was found on the property, which is on the west side of the Grizzly anticline. Two small, previously unmapped stocks are poorly exposed nearby. These biotite granites range from fine grained to pegmatitic and contain up to 10% quartz, biotite and tourmaline. The stocks are intrusive to a package of Hadrynian Grit Unit clastic rocks and limestone, possibly faulted against lower Cambrian and older (?) "Phyllite Unit".

Current Work and Results:

Preliminary investigations in 1981 were interrupted by a forest fire. Fifty-eight grid soil samples, and reconnaissance stream sediment and soil samples were analyzed for W and Mo. Both geochemical and panning samples were collected at stream sediment sample sites. Most geochemical samples (soil and stream sediment) contained 1 ppm W only, although a few single sample highs were reported. All samples contained less than 3 ppm Mo.

******

QUO
Archer, Cathro and
Associates (1981) Limited
Geochemical Target
95 D 6 (19)
(60° 28'N,127° 20'W)

Claims: QUO 1-16

Source: Summary by P. Watson from assessment report 091423 by A.R. Archer.

History:

Soil and stream sediment samples previously collected in the area were reanalyzed and results delineated an area of anomalous gold values which was staked in 1982.

Description:

The property is located 90 km northeast of Watson Lake. The area is underlain by upper Precambrian and lower Paleozoic rocks, bounded on the east by the Rock River Fault.

Current Work and Results:

In 1982, 74 soil and 21 stream sediment samples were collected and analyzed for Au.

******

SPRUCE
SEREM Limited
95 D 7 (21)
(60°19'N,126°32'W)

Claims: SPRUCE (48)

Current Work and Results:

The property was mapped at 1"=1 mile and 1"=1/2 mile scales in 1982. Stream sediment and contour soil sampling programs and a single line proton magnetometer survey were carried out on part of the claim block.

******

ROCK RIVER COAL
Sulpetro Minerals limited
Coal
95 D 11,14 (22)
(60°45'N,127°10'W)

Reference: D.I.A.N.D. (1982, p.86).

Coal Exploration Licences: 117, 118, 121, 122

Source: Summary from assessment report 062132 by J.L. Wright.

Current Work and Results:

In March, 1982, a gravity survey was conducted and six anomalies were located. Three of these anomalies could represent substantial volumes of carbonaceous material (coal). In addition, two poorly defined anomalies require further work for verification of additional reserves.

******

1982 MINERAL CLAIMS STAKED

QUO
Archer, Cathro and
Associates (1981) Limited
95 D 6 (19)
(60° 28'N,127° 21'W)

Claims 1982: QUO 1-16

SPRUCE
SEREM Limited
95 D 7 (21)
(60° 19'N,126° 32'W)

Claims 1982: SPRUCE 1-48

LOBO
A. Potter
95 D 7 (20)
(60° 19'N,126° 35'W)

Claims 1982: LOBO 1-8, 2Fr

DK
R.H. Seraphim
Engineering Limited
95 D 10 (16)
(63° 35'N,126° 49'W)

Claims 1982: DK 49-64

PORKER
Archer, Cathro and
Associates (1981) Limited

95 D 12 (8)
(60° 32'N,127° 49'W)

Claims 1982: QUIVER 1-40

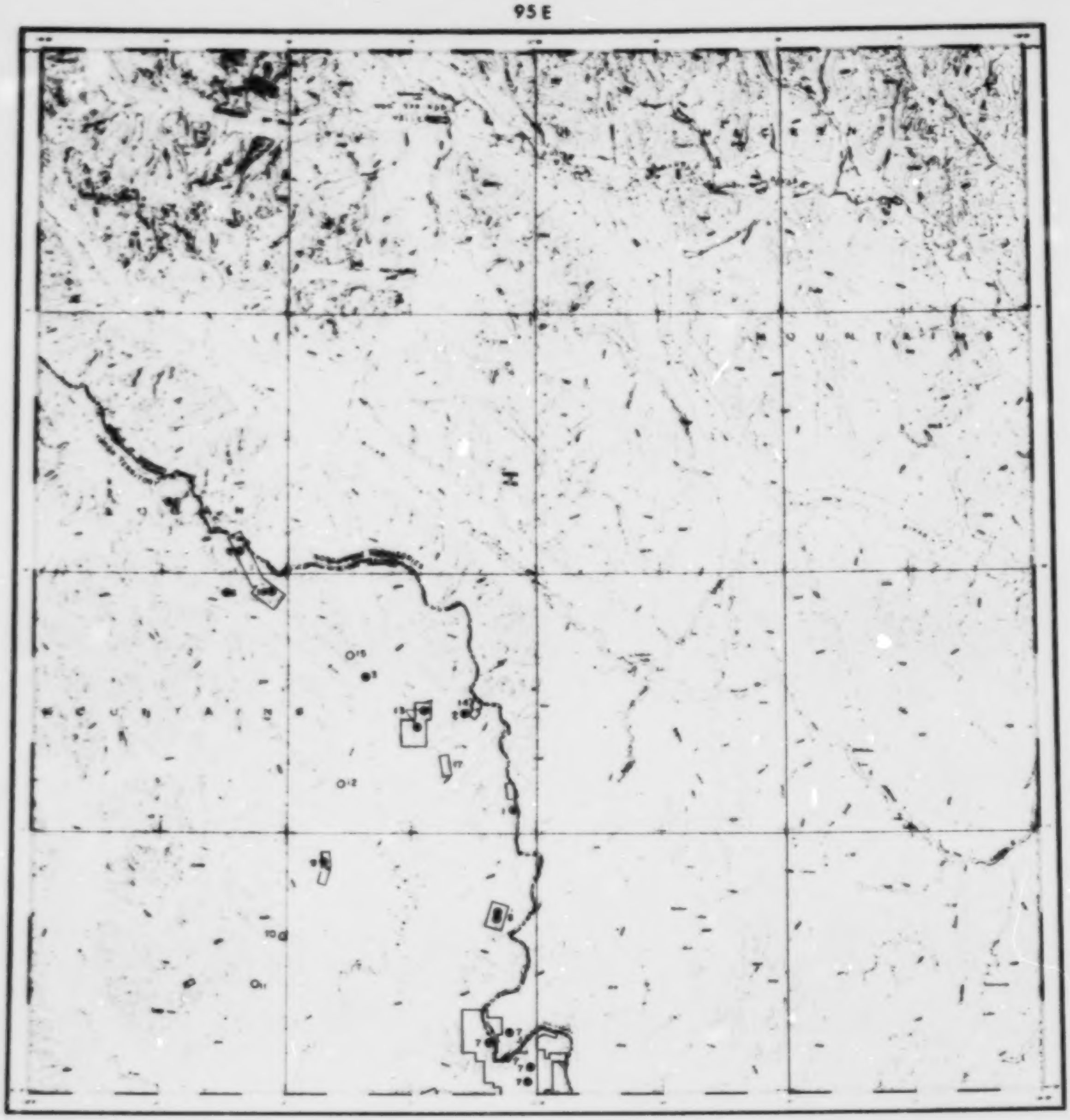
PLAY
Noranda Exploration
Company Limited

95 D 12 (12)
(60° 36'N,127° 44'W)

Claims 1982: PLAY 1-4

******

95 E



FLAT RIVER

YUKON TERRITORY / NORTHWEST TERRITORIES

Kilometres 5 0 5 10 15 20 25 30 Kilometres

Mineral Deposit or Occurrence see Key on facing page

Geochemical Target

Mineral Claims in good standing (Jan 1982) and staked before Jan 1982

Mineral Claims staked in 1982

Placer Leases in good standing (Jan 1982)

Placer Claims in good standing (Jan 1982)

CEL .... Coal Exploration Licence

CML .... Coal Mining Lease

Tote Trail

Driveable Road

Oil or Gas Well

Airstrip

FLAT RIVER MAP-RIVER (NTS 95 E)

General Reference: GSC Map 1313A and Memoir 366 by: H. Gabrielse, J.A. Roddick, S.L. Blusson, 1973.

NO.	PROPERTY NAME	REFERENCE
1	TWIN (SUNSET)	Copper-Silver-Lead-Zinc-Gold Vein; Morin et al (1980, p. 50)
2	KOMISH	Skarn Tungsten Occurrence
3	MARION	Gabrielse et al (1965, p. 28); Mulligan (1964, p. 81)
4	HEATHER	
5	CAESAR	Skarn Tungsten Occurrence
6	CHARLIE	D.I.A.N.D. (1981, p. 135)
7	IVO	This Report
8	SNEET	D.I.A.N.D. (1981, p. 136)
9	FYIQ	D.I.A.N.D. (1981, p. 136-137)
10	JOSE	D.I.A.N.D. (1981, p. 137)
11	NOWA	D.I.A.N.D. (1981, p. 137)
12	HOGIE	D.I.A.N.D. (1981, p. 137)
13	CREAM	This Report
14	LABELLE	D.I.A.N.D. (1981, p. 137)
15	ROSE	D.I.A.N.D. (1982, p. 90)
16	RIO	D.I.A.N.D. (1982, p. 90)
17	VNER	D.I.A.N.D. (1982, p. 90)

IVO
Archer, Cathro and Associates (1981) Limited
(CUB Joint Venture)

Tungsten Skarn
95 E 2,3 (7)
(61°03'N,127°03'W)

References: D.I.A.N.D. (1982, p.89,90); D.I.A.N.D. (1981, p.135-136).

Claims: IVO (274) plus 5 claims in N.W.T.

Source: Summary by P. Watson from assessment report 091027 by C.A. Main and R.J. Cathro.

Current Work and Results:

In 1981, 1,222 m were drilled in 12 holes to test a 4 km length of contact between a Tertiary (?) K-feldspar porphyry biotite granite (the 'Salivo Stock') and lower Paleozoic sediments. All holes bottomed in granite. The two northern holes tested beneath the Salivo showing, which consists of brown garnet skarn float containing molybdoscheelite that grades up to 3% WO_3 and 200 ppm Mo. The holes intersected rocks of the Backbone Ranges Formation. The other 10 holes intersected skarn developed in the upper part of the Sekwi Formation limestones. The best intersection contained scheelite, molybdoscheelite, pyrrhotite and rare chalcopyrite and molybdenite and graded 0.44% WO_3 over 7.6 m.

******

CREAM
Archer, Cathro and Associates (1981) Limited
(CUB Joint Venture)

Tungsten Skarn
95 E 6 (13)
(61°23'N,127°13'W)

References: D.I.A.N.D. (1982, p.89-90); D.I.A.N.D. (1981, p.51-54).

Claims: CREAM (44)

Source: Summary by P. Watson from assessment report 091020 by C.A. Main and R.J. Cathro.

Description:

Three small (500 m by up to 2 km), previously unmapped, tourmaline and biotite rich plutons of granitic composition intrude lower Paleozoic or older clastic rocks and limestones. These stocks are recessive-weathering and are exposed only in low terrain. They are younger than the typical Cretaceous stocks of the area, such as the North Coal Batholith, and one was dated by D. Archibald at Queen's University as 69.4±1.2 my. The stocks contain unusually large quantities of biotite, muscovite and tourmaline and are surrounded by wide aureoles of pervasive biotite alteration. They are also cut by closely spaced fracture systems containing pegmatitic quartz, tourmaline, muscovite and biotite.

Six tungsten showings are known in the area, all occurring as skarns in the calcareous members of the lower Paleozoic(?) country rock at the margins of plutons. Three occur at the contact of the North Coal Batholith and three are adjacent to the small, younger stocks.

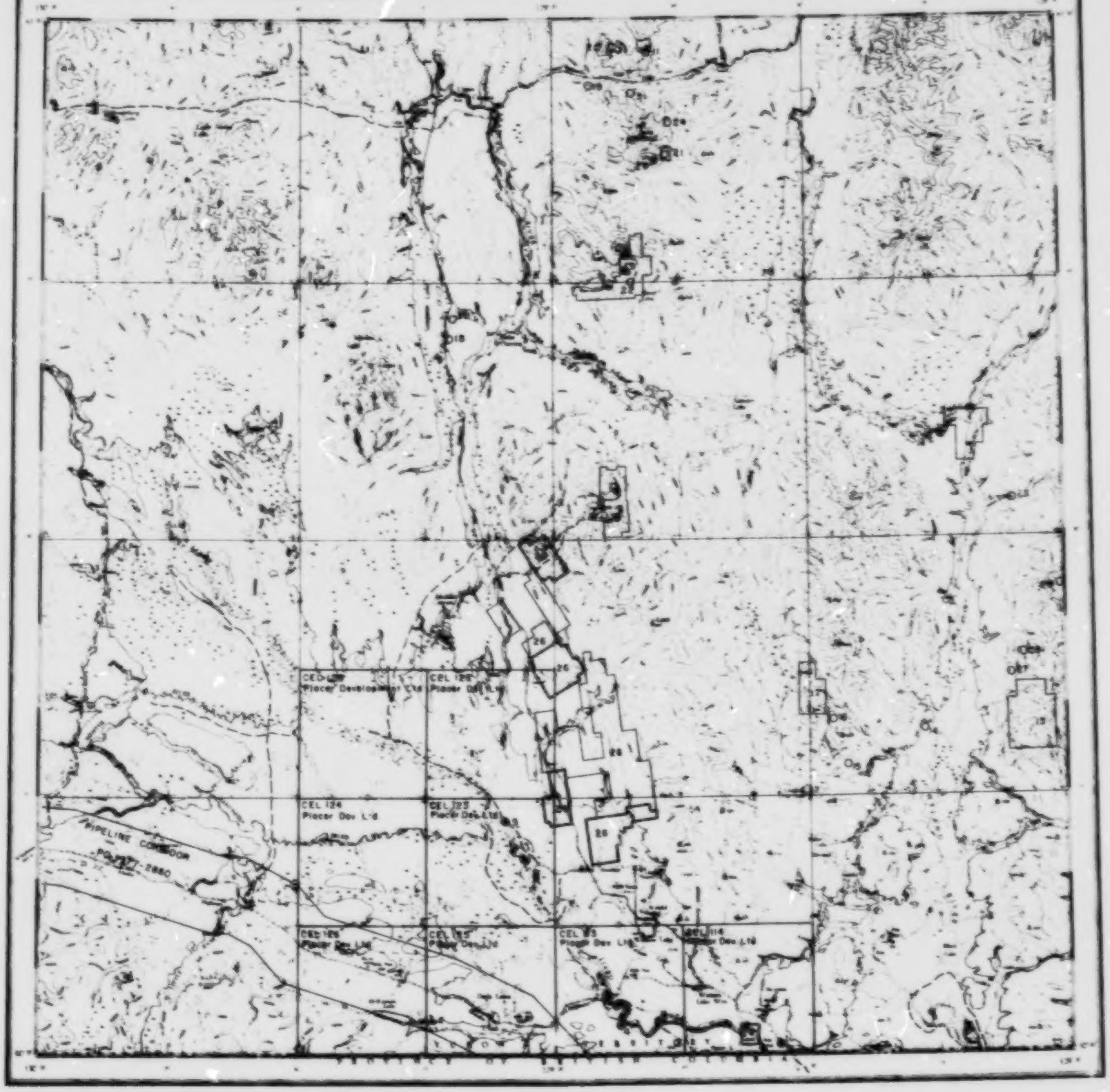
The two original showings (Iso #1 and Iso #2) were found in 1969 by Iso Mines Ltd. and were explored by Placer Development Ltd. in 1970-71. Drill intersections of 0.85% WO_3 over 7 m were reported from the #1 showing. The four other showings were found during the current program, either as float or outcrop. These consist of scheelite-bearing diopside ±garnet skarns that occur in thin calcareous horizons adjacent to the stocks.

Current Work and Results:

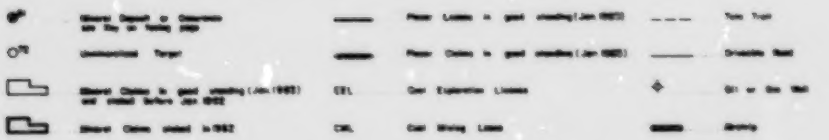
In 1981, 265 soil samples were collected. Small, erratically distributed W anomalies containing up to 38 ppm W were reported. All Mo values were less than 3 ppm W. Magnetometer and VLF-EM surveys were also conducted.

******

105 A


CEL 127
Placer Development Ltd
CEL 126
Placer Dev Ltd
CEL 124
Placer Dev Ltd
CEL 123
Placer Dev Ltd
CEL 125
Placer Dev Ltd
CEL 115
Placer Dev Ltd
CEL 113
Placer Dev Ltd
CEL 114
Placer Dev Ltd
PIPELINE CORRIDOR
PROVINCE OF BRITISH COLUMBIA

WATSON LAKE
YUKON TERRITORY



WATSON LAKE MAP-AREA (NTS 105 A)

General Reference: GSC Map 19-1966 by: H. Gabrielse, 1966.

NO.	PROPERTY NAME	REFERENCE
1	WATSON	Dawson (1889, p. 99)
2	NAZO	D.I.A.N.D. (1982, p. 95,98)
3	CAROL	Lord (1944, p. 19)
4	ALBERT	Lord (1944, p. 19)
5	SAWMILL	Lord (1944, p. 19)
6	HUNDERE	D.I.A.N.D. (1982, p. 93)
7	RITCO	Findlay (1967, p. 65-66)
8	OSCAR	Skarn Tungsten-Copper-Molybdenum
9	PAT	D.I.A.N.D. (1981, p. 140)
10	MARTIN	Skarn Tungsten-Copper
11	NOTT	D.I.A.N.D. (1982, p. 93-94)
12	WARBURTON	Silver-Lead-Zinc-Copper Vein; D.I.A.N.D. (1982, p. 95)
13	HYLAND	D.I.A.N.D. (1982, p. 94)
14	TILL	D.I.A.N.D. (1981, p. 141)
15	LING	D.I.A.N.D. (1981, p. 141)
16	TOMMY	D.I.A.N.D. (1981, p. 141)
17	CELESTIAL	D.I.A.N.D. (1982, p. 94)
18	FALSE	D.I.A.N.D. (1981, p. 141)
19	KLUNK	D.I.A.N.D. (1981, p. 141)
20	BLACK	D.I.A.N.D. (1982, p. 94-95)
21	MURRAY (RAY)	D.I.A.N.D. (1981, p. 140)
22	PEGASEUS	D.I.A.N.D. (1981, p. 141)
23	GUM BEE	Morin et al (1980, p. 51)
24	EMILY	Morin et al (1980, p. 52)
25	MARK	Morin et al (1980, p. 52)
26	GE	This Report
27	CJ	D.I.A.N.D. (1982, p. 95)
28	MJM	D.I.A.N.D. (1982, p. 95)
29	AUP	This Report
30	CASHBOX	D.I.A.N.D. (1982, p. 95)
31	MOLLY	D.I.A.N.D. (1982, p. 95)

GE
Kerr Addison Mines Limited

Geophysical Target
105 A 2,3,6,7 (26)
(60°17'N,128°55'W)

Reference: D.I.A.N.D. (1982, p.93,95).

Claims: GE (943)

Source: Summary by P. Watson from assessment report 091396 by D. Arscott and G. Ellis.

History:

This 200 km^2 area was staked to cover a large number of electromagnetic conductors outlined in a 1981 airborne geophysical survey. It was optioned to Kerr Addison Mines Ltd. in 1982 and they now hold most of the claims.

Description:

The property is located just north of Watson Lake with the Robert Campbell Highway running along its western boundary. It covers the lowland area between the Liard and Frances Rivers and is blanketed by alluvial and glacial deposits. It is underlain by chert, greywacke and phyllite with minor (less than 10%) interbeds of siltstone and argillite. A few outcrops of schist, gneiss, andesite, ultramafic rock, felsic intrusive, volcanic breccia, calcareous siltstone and felsic volcanic rocks were reported on the property. At this time, it appears that the chert is of post-Upper Devonian age and part of an allochthonous package of rocks, but it is possible that older rocks might be exposed in windows on the property (see Abbott, in D.I.A.N.D., 1981, p.45-54).

Current Work and Results:

During the regional program, 886 soil and stream sediment, and 28 lake bottom sediment samples were collected, and analyzed for Cu, Pb, Zn, Ag and Ba. Some were also analyzed for Au and Hg. Background values for soil and stream sediment samples were similar for all elements except Ba, which was higher in soil samples. The most anomalous results were in the areas of least overburden.

Detailed geophysical and mapping programs were carried out on 16 grids. The magnetometer survey of 52.3 line-km did not provide any useful correlations. A total of 96.6 line-km of shootback EM and VLF-EM were run and gravity measurements were taken at 528 stations.

A large portion of the airborne EM anomalies are believed to be caused by carbonaceous sediments. Others were attributed to the effects of overburden or swampy ground. Several mineralized rock samples were found, including a quartz-carbonate-sericite rock containing 1.25% Cu, 1.65% Pb, 1.2% Zn, 92.7 g Ag/t and 1,800 ppm Ba.

******

AUP	Geochemical Target
Archer, Cathro and Associates (1981) Limited	105 A 8 (29) (60°27'N,128°02'W)

Reference: D.I.A.N.D. (1982, p.93,95).

Claims: AUP 1-24

Source: Summary by P. Watson from assessment report 091424 by A.R. Archer.

History:

The claims were staked in 1981 to cover anomalous geochemical values found in samples collected during an earlier reconnaissance program.

Description:

The property is located 55 km northeast of Watson Lake and is underlain by Hadrynian sedimentary rocks of the Grit Unit.

Current Work and Results:

During the 1982 sampling program, 19 stream sediment and 228 soil samples were collected and analyzed for Au, As, Bi, W, Pb, Cu and Ag.

******

1982 MINERAL CLAIMS STAKED

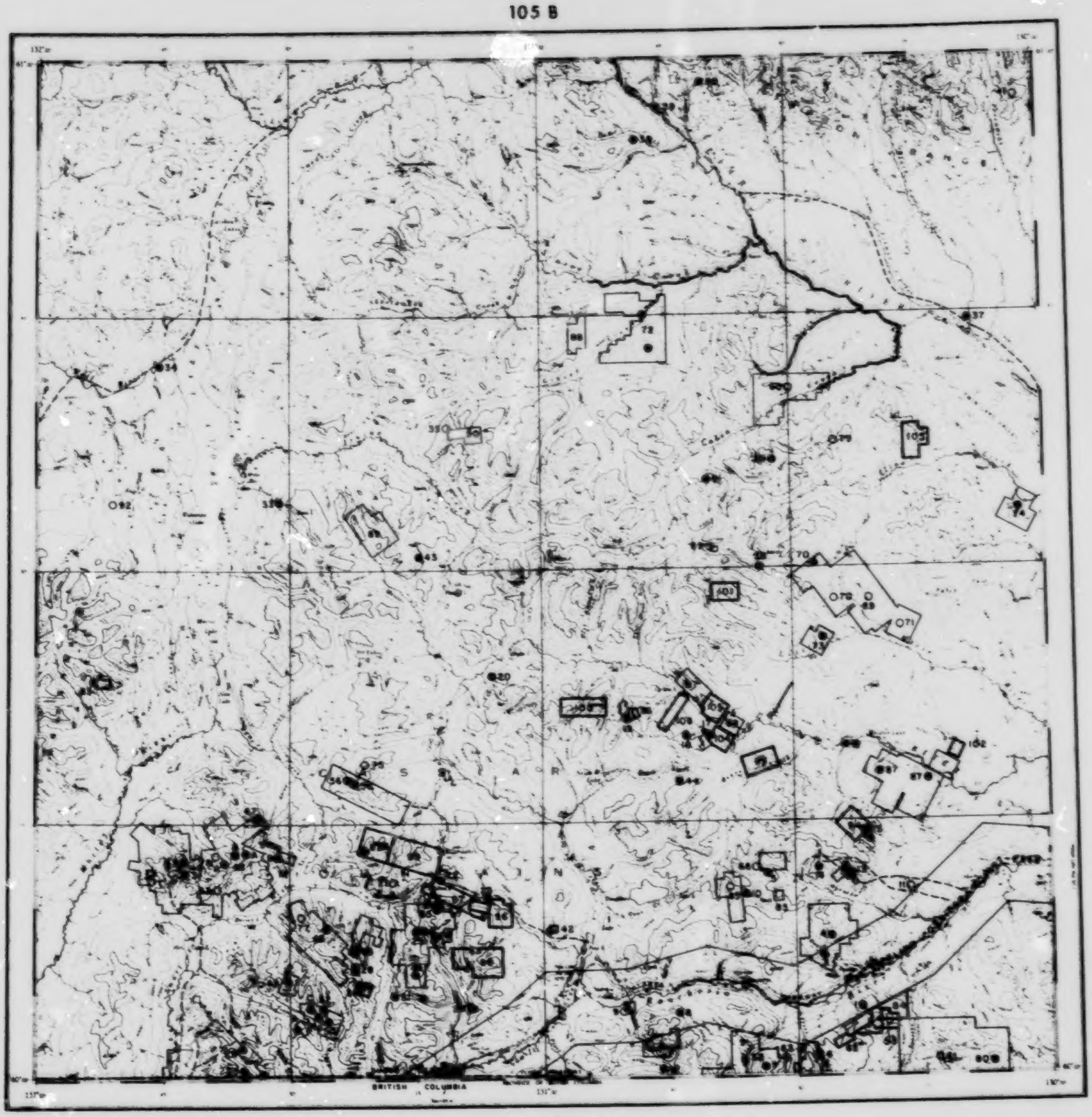
GE Kerr Addison Mines Limited	105 A 2,3,5,6,7 (26) (60°13' - 60°28'N, 128°47' -129°08'W)

Claims 1982: GE 612-884, 891-950

******

NOTES

105 B


BRITISH COLUMBIA
S
A
R
N
C
R A N G E

WOLF LAKE

YUKON TERRITORY

Kilometres
0
5
10
15
20
25
30
Kilometres

●^{26}	Mineral Deposit or Occurrence see Key on facing page	▬	Placer Leases in good standing (Jan.1963)	– – –	Tote Trail
○^{78}	Unconfirmed Target	▬	Placer Claims in good standing (Jan.1963)	—	Drivable Road
⌐	Mineral Claims in good standing (Jan. 1963) and staked before Jan.1962	CEL	Coal Exploration Licence	◆	Oil or Gas Well
⌐	Mineral Claims staked in 1962	CML	Coal Mining Lease	▬	Airstrip

WOLF LAKE MAP-AREA (NTS 105 B)

General Reference: GSC Map 10-1960 by: W.H. Poole, J.A. Roddick and L.H. Green, 1960.

NO.	PROPERTY NAME	REFERENCE
1	LORD	Lord (1944, p. 17)
2	STERLING	Silver-Lead-Zinc-Copper-Gold Vein
3	LUCK	D.I.A.N.D. (1981, p. 144)
4	FIDDLER	D.I.A.N.D. (1981, p. 144)
5	LENA	Silver-Lead Vein
6	DALE	This Report
7	HOLLIDAY	Silver-Lead-Zinc-Tin Vein
8	TROY	Copper Occurrence
9	CARLICK	
10	SHILSKY	Skarn Copper
11	KUBIAK	Lead-Zinc Vein
12	BLACK ROCK	Silver-Lead-Zinc-Copper Vein
13	KODIAK	Green (1965, p. 44); This Report
14	HARDTACK	Green (1965, p. 44)
15	KERNS	Silver-Lead-Zinc-Copper-Tungsten Vein; D.I.A.N.D. (1982, p. 105)
16	MEISTER	Copper Vein
17	NITE	Skarn Tungsten-Molybdenum-Zinc
18	MIDNIGHT (MID)	This Report
19	AURORA	D.I.A.N.D. (1981, p. 159); This Report
20	ALMOST	Tungsten Occurrence
21	HIDDEN (PONT B)	Morin et al (1980, p. 56)
22	ATOM	D.I.A.N.D. (1981, p. 144)
23	BAR	D.I.A.N.D. (1981, p. 144); This Report
24	BOM	This Report
25	MUNSON	D.I.A.N.D. (1981, p. 145)
26	PARTRIDGE (VAL A)	D.I.A.N.D. (1981, p. 147)
27	GEM	D.I.A.N.D. (1981, p. 147)
28	VAL B	This Report
29	LOGJAM	This Report
30	LOGTUNG (BERYL)	D.I.A.N.D. (1982, p. 98,105)
31	J.C. (VIOLA)	This Report
32	POG	Silver-Lead Vein
33	TROUT	Iron Vein
34	MUNG	Copper Porphyry
35	IRVINE	D.I.A.N.D. (1981, p. 149)
36	TUNG	D.I.A.N.D. (1981, p. 149)
37	MOOSELICK	Craig and Laporte (1972, Vol. 1, p. 138-139)
38	DOME	Green (1966, p. 84)
39	OLD GOLD	Findlay (1967, p. 64)
40	RAINBOW	Copper Vein
41	PORCUPINE	Asbestos; D.I.A.N.D. (1982, p.106)
42	OULETTE	D.I.A.N.D., Mines and Minerals Activities, 1971, p. 73; This Report
43	ZAC	Sinclair & Gilbert (1975, p. 80)
44	BOY	D.I.A.N.D. (1981, p. 150)
45	M.C. (SWIFT)	D.I.A.N.D. (1982, p. 98-99)
46	DU	D.I.A.N.D. (1982, p. 99)
47	I	D.I.A.N.D. (1982, p. 99,105)
48	SIN	D.I.A.N.D. (1981, p. 152); D.I.A.N.D. (1982, p. 105)
49	VH	D.I.A.N.D. (1981, p. 152)
50	SLOUCE	D.I.A.N.D. (1982, p. 99,105)
51	SKIN	D.I.A.N.D. (1981, p. 152)
52	MW	D.I.A.N.D. (1982, p. 99)
53	MUN	This Report
54	CAN	D.I.A.N.D. (1982, p. 100)
55	STQ	D.I.A.N.D. (1981, p. 145)
56	HL	D.I.A.N.D. (1982, p. 100)
57	FUR	D.I.A.N.D. (1981, p. 155)
58	COM (54-59)	D.I.A.N.D. (1981, p. 155)
59	COM (45-53)	D.I.A.N.D. (1981, p. 155)
60	CABIN	D.I.A.N.D. (1982, p. 100)
61	MIDWAY (TOOT)	This Report
62	IDAHO	D.I.A.N.D. (1981, p. 159); This Report
63	ANT	D.I.A.N.D. (1981, p. 159); This Report
64	LICK	D.I.A.N.D. (1982, p. 101-102)
65	GOAT	D.I.A.N.D. (1982, p. 102)
66	BESSEY	D.I.A.N.D. (1981, p. 159)
67	CARIBOU	D.I.A.N.D. (1981, p. 156)
68	OAKE	D.I.A.N.D. (1981, p. 156)
69	URSUS	D.I.A.N.D. (1982, p. 103)
70	LOGAN	This Report
71	MOOSE	D.I.A.N.D. (1981, p. 156)
72	TEAM	D.I.A.N.D. (1982, p. 103,105)
73	LITTLE MOOSE	D.I.A.N.D. (1981, p. 157)
74	WOLF	D.I.A.N.D. (1982, p. 103)
75	ICE	D.I.A.N.D. (1982, p. 103)
76	PLUG	D.I.A.N.D. (1981, p. 158)
77	PONT	D.I.A.N.D. (1981, p. 158)
78	ZINC	D.I.A.N.D. (1981, p. 158)
79	ELLE	D.I.A.N.D. (1981, p. 158)
80	HOT	D.I.A.N.D. (1981, p. 159)
81	BINGY	Sinclair et al (1976, p. 159-160)
82	GULL	Morin et al (1980, p. 56); This Report
83	ANNI	This Report
84	MAC	This Report
85	LOST	D.I.A.N.D. (1982, p. 105)
86	PINESOL	D.I.A.N.D. (1982, p. 105)
87	MR	This Report
88	STONEAXE	D.I.A.N.D. (1982, p. 104,105)
89	THRALL	This Report
90	SOURCE	This Report
91	BORDER	D.I.A.N.D. (1982, p. 104)
92	CO	D.I.A.N.D. (1982, p. 105)
93	LYDIA	This Report
94	CER	This Report
95	SEA	This Report
96	PARK	This Report
97	FALL	This Report
98	CRE	This Report
99	BEA	This Report
100	SAB	This Report
101	MEI	This Report
102	GLEN	This Report
103	TOD	This Report
104	MAR	This Report
105	OTH	This Report
106	BRX	This Report

DALE
Loann Silver Mines
Lead, Silver
105 B 1 (6)
(60° 01'N,130° 29'W)

References: D.I.A.N.D. (1982, p.97,105); Green (1966, p.79).

Claims: LOLA (18); L (4); X (2); ANNE (8); POND 1-6

Source: Summary by P. Watson from assessment report 091054 by V. Cukor.

History:

A block of new claims was added to the property in 1981. In 1968, 8.2 tonnes of ore shipped from the property assayed 56% Pb and 3,531.5 g Ag/t. In 1970, 20 additional tonnes were shipped.

Description:

The property is 7 km southeast of Rancheria, and is underlain by granodiorite of the Cassiar Batholith. A northeast-trending shear zone contains spotty but high grade Ag-Pb-Zn mineralization over a 400 m strike length and widths up to 2.1 m.

Current Work and Results:

In 1981, one 106.7 m deep diamond drill hole and VLF-EM and magnetometer surveys were completed. The hole intersected 3 m of 0.34 g Au/t, 199.9 g Ag/t, 4.31% Pb and 2.68% Zn. A total of 11.5 line-km of EM-16 and 9 line-km of magnetometer surveys were conducted. The EM survey indicated that the shear zone extends for a possible 15 km.

******

MIDNIGHT (MID)
W. Hyde;
McCrory Holdings Limited
Manganiferous
Vein and Skarn
105 B 7 (18)
(60°20'N,130°44'W)

References: D.I.A.N.D (1982, p.97,105); D.I.A.N.D. (1981, p.159).

Claims: CMC 1-136

Source: Summary by P. Watson from assessment report 091084 by V. Ryback-Hardy and assessment report 091379 by T.C. Scott.

History:

The area was first staked in 1947 (BASTILLE claims) and was re-staked as MID and NIGHT in 1971. Grid soil sampling, mapping and test pitting programs were carried out and two skarn showings were located. Following trenching and 476.4 m of diamond drilling in 8 holes, the claims lapsed. The CMC claims were staked in 1980 and acquired by McCrory Holdings Ltd. in 1981. Some hand trenching was done in 1981, and in 1982 Pamicon Developments Ltd. conducted diamond drilling on behalf of BRX Mining and Petroleum Ltd.

Description:

The property, 105 km east of Teslin, covers a series of manganiferrous showings that occur near the contact between interbedded quartz biotite schist and marble of Cambrian or older age, and the Jurassic to Cretaceous Cassiar Batholith.

Minor molybdenite and scheelite were reported in a narrow skarn zone near the contact, and 100 m east, a garnet-pyroxene-quartz-wollastonite skarn with scheelite and minor molybdenite was traced over several hundred metres. Late stage veins contain minor sphalerite. Several gossanous zones at the base of the marble unit may represent leached veins.

Current Work and Results:

The gossans extend for up to 400 m in length over 3 m to 50 m in width. Manganese oxides (psilomelane and pyrolusite) are found in vuggy quartz veinlets containing galena, sphalerite and molybdenite and some Ag values. Chip samples (unknown length) across the zone returned up to 4.5% Pb, 6.2% Zn and 81.6 g Ag/t, but most were less than 1% Pb, 2.4% Zn and 34.3 g Ag /t.

In 1982, 196.6 m were drilled in two diamond drill holes and some diopside garnet skarn was intersected.

******

BOM
J.C. Stephen
Explorations Limited
Zinc, Lead, Silver
Skarn
105 B 3 (24)
(60°09'N,131°11'W)

Reference: D.I.A.N.D. (1982, p.97,98).

Claims: ROAD (44)

Current Work and Results:

In 1982, 1:1,200 scale mapping and a magnetometer survey were completed on a small area of the property.

******

VAL B
Du Pont of Canada
Exploration Limited;
Duval Mining Limited
Tin, Zinc Skarn
105 B 3 (28)
(60°06'N,131°22'W)

References: D.I.A.N.D. (1981, p. 147); Morin et al (1980, p. 54).

Claims: VAL (12)

Source: Summary by P. Watson from assessment report 091414 by J.M. Kowalchuk.

History:

All but 6 of the original VAL claims were allowed to lapse in 1981. Six new claims (VAL 101-106) were staked nearby in 1982.

Current Work and Results:

The new claims were mapped at 1:2,500 and 1:1,000 scales. Two varieties of skarn were mapped: orange-brown garnet and actinolite with some diopside, and diopside and brown garnet with some actinolite and calcite. All skarns contain sphalerite, magnetite, fluorite and limonite, but this material is most commonly found as pods in the actinolite-garnet and in the diopside-garnet-actinolite skarns. Disseminated galena with up to 8% sphalerite was noted in one skarn.

VLF-EM, magnetometer and geochemical surveys were carried out in 1982. Two magnetic zones, 200 m by 100 m and 50 m by 300 m, correspond directly to the magnetite-bearing skarn zones, and a small magnetic anomaly lies over the peridotite outcrops. The VLF-EM survey indicated a large conductive zone with three centers which partially correspond to the location of skarns.

Two hundred and ten 'C' horizon soil samples were collected and analyzed for Sn. Values greater than 51 ppm Sn were considered definitely anomalous. Higher values tend to concentrate near the granite and ultramafic unit contacts. Rock samples also returned higher values near intrusive contacts and low values over the magnetic anomalies.

Four 5 m chip samples across relatively magnetite-rich rocks were tested for both 'cassiterite tin' and total tin content. Values such as 50 ppm Sn in cassiterite and up to 1,500 ppm total Sn indicate that tin-bearing silicates are probably present. A sample of the actinolite-magnetite skarn contained 460 ppm Sn in cassiterite and 1,000 to 1,800 ppm total tin, while the garnet-actinolite skarn contained 30 ppm Sn in cassiterite and greater than 1,000 ppm total Sn.

The magnetite-actinolite skarns, which occur nearest to the granite, are higher in cassiterite and lower in sphalerite than the diopside-garnet skarns which occur further from the granite body.

******

LOGJAM
A.M.P. Exploration
and Mining Limited

Gold,Silver,Lead,
Zinc Vein
105 B 4 (29)
(60°01'N,131°06'W)

Reference: D.I.A.N.D. (1981, p.143,147).

Claims: BARB; LOG; (34 claims and 12 fractions)

Current Work and Results:

In 1981, 14.3 m were drifted on the #4 Vein on the 5150 level (lower adit). The diorite dyke was not intersected during 1982 drifting and the vein was only weakly mineralized. Legal claim and control surveying was also done in 1981 and 1982.

******

J.C. (VIOLA)
Cominco Limited

Tin Skarn
105 B 4 (31)
(60°12'N,131°44'W)

References: D.I.A.N.D. (1982, p. 97,98); D.I.A.N.D. (1981, p.148).

Claims: J.C. (82)

Source: Summary by P. Watson from assessment report 091062 by L.J Nagy.

Current Work and Results:

In 1981, eight diamond drill holes totalling 1,527 m were drilled on the main skarn zone. One hole completed to the west of the main zone was summarized previously (D.I.A.N.D., 1982, p.98).

******

MUN
J.C. Stephen Explorations
Limited;
D.C. Syndicate

Tin,Tungsten Skarn
105 B 3 (53)
(60°08'N,131°21'W)

References: D.I.A.N.D. (1982, p.97,100); D.I.A.N.D. (1981, p.153); Morin et al (1980, p.55).

Claims: MUN (80)

Source: Summary by P. Watson from assessment report 091441 by J.C. Stephen.

Current Work and Results:

In 1982, two BQ diamond drill holes were drilled to 77.7 m and 76.5 m, respectively. The holes intersected quartzite and calc-silicate units, including diopside skarn. Disseminated pyrrhotite, quartz veins with tourmaline and pyrrhotite and minor pyrrhotite and pyrite in skarn were reported. In a 5.5 m thick band of diopside skarn, 1.6 m sections contained up to 2,100 ppm Zn with 38 ppm Cu. A 0.6 m thick tourmaline-quartz-pyrrhotite vein higher in the same drill hole contained 25 ppm Cu, 165 ppm Zn and 700 ppm Sn. This was included in a 7.92 m section of altered quartzite averaging 356 ppm Sn. Neither hole reached the contact of the Seagull Batholith.

******

MIDWAY
Regional Resources Ltd.;
Amax of Canada Limited;
Procan Exploration Company;
Cordilleran Engineering

Lead,Zinc,Silver
Stratabound;
Barite Stratiform
105 B 1 (61)
(60°02'N,130°12'W)

References: D.I.A.N.D. (1982, p.9,97,101,105).

Claims: MID (240) plus 1002 units in British Columbia

Source: Summary by P. Watson from assessment report 091418 by J.J. Hylands, E.T. Pezzot and G.E. White.

Current Work and Results:

In 1982, a detailed ground survey was used as control for a series of black and white and colour air photos taken over various parts of the property at scales ranging from 1:40,000 to 1:10,000. Two areas of zero outcrop were examined with horizontal loop pulse EM. These surveys indicate the presence of numerous, narrowly spaced, near surface, highly conductive, dyke-like zones, possibly related to stratigraphy, and, in one area, a horizontal, near surface conductor.

Diamond drilling in 1982 (on the B. C. claim units) totalled 5,283 m in 15 holes. Results such as 8.9 m of 10.46% Pb, 15.68% Zn and 691.2 g Ag/t were found in drill core, according to press releases. Present estimates, based on exploration drilling, have been indicated in press releases as 3,600,000 tonnes of 411 g Ag/t and 19% combined Pb-Zn.

******

LOGAN
Regional Resources Ltd.;
Cordilleran Engineering

Zinc,Silver,Tin,
Copper Vein
105 B 7,8,9 (70)
(60° 28'N,130° 28'W)

References: D.I.A.N.D. (1982, p.97); D.I.A.N.D. (1981, p.156).

Claims: LOGAN 1-36

Source: Summary by P. Watson from assessment report 091400 by J.D. Rowe and M.H. Sanguinetti.

Current Work and Results:

In 1982, 72 soil samples were collected southwest of known mineralization and several Zn, Pb and Sn linear soil anomalies were outlined. A 500 m by 100 m area of anomalous Pb and Sn in soil merges into a 200 m by 200 m Zn anomaly to the northeast. A second, smaller Zn anomaly parallels the first 200 m to the northeast and a subparallel, arcuate trend of anomalous Sn values was outlined 200 m to the southeast.

Two trenches were excavated by hand in the area of extensive sphalerite-rich float. The trenches did not reach bedrock, but did expose boulders of sphalerite mineralization in quartz veins. Granodiorite float with mineralized quartz stockwork veining was found upslope of the trenches.

A chip sample across a 1.78 m vein, collected in 1980, contained 7.22% Zn, 63.77 g Ag/t and 0.73% Cu. Brecciated felsite cut by quartz stockwork contained up to 1.42% Sn with minor sphalerite and arsenopyrite.

******

ANNI
J.C. Stephen
Explorations Limited

Skarn
105 B 5 (83)
(60°23'N,131°53'W)

Reference: Morin et al (1980, p. 59).

Claims: JAR 1-8

Current Work and Results:

Anomalously high tin and zinc geochemical values appear to be associated with small skarn zones within sedimentary rocks close to the Hake Batholith. Approximately 100 contour talus and soil samples were collected as part of a 1:1,200 scale mapping program.

******

MR
Regional Resources Ltd.;
Getty Canadian Metals, Limited;
Cordilleran Engineering

Lead,Zinc,Silver
105 B 1,8 (87)
(60° 17'N,130° 18'W)

References: D.I.A.N.D. (1982, p.97,104,105).

Claims: MR (376)

Source: Summary by P. Watson from assessment report 091028 by C.G. Verley and M.H. Sanguinetti, and assessment report 091419 by M.H. Sanguinetti and B.A. Youngman.

History:

The claims were staked in 1981 and 1983 by Cordilleran Engineering for Regional Resources, as a result of an airborne EM, resistivity and magnetometer survey.

Description:

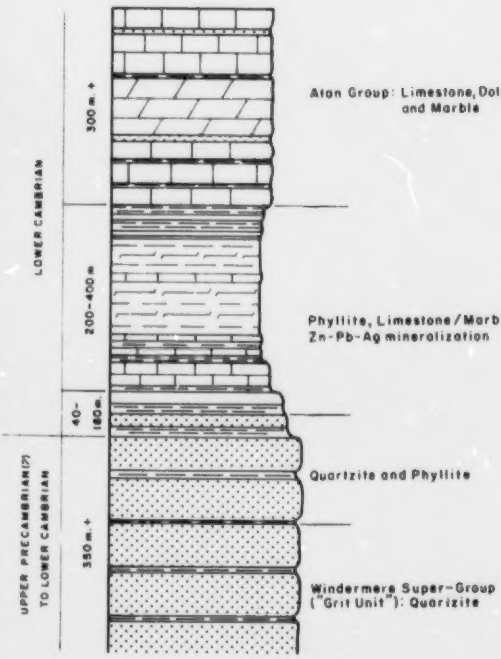
The property is located 97 km west of Watson Lake, southeast of Meister Lake, in the Cassiar Mountains. It is underlain by a sequence of folded, Upper Precambrian to Lower Cambrian, miogeoclinal metasedimentary rocks, including quartzites, graphitic and calcareous phyllites and limestone. A Cretaceous quartz monzonite stock intruding these rocks is exposed 1.6 km north of the claims.

At least 350 m of thick-bedded to massive "clean" quartzite, with minor interbeds of phyllite and quartz mica schist are exposed on the property (see figure). This probably represents the upper part of the Late Proterozoic to Lower Cambrian "Grit Unit" and forms the lowermost part of the exposed sedimentary package.

This is overlain by 40-180 m of Lower Cambrian quartzite and phyllite which show a gradational change from rusty, micaceous quartzite to siliceous sandstone interbedded with silty phyllite.

A recessive unit of Lower Cambrian phyllite, marble and schist, which hosts Pb-Zn-Ag mineralization, is exposed for 200-400 m on the property. Graphitic phyllite with local calcareous or silty phyllite, quartz biotite schist and calc-schist forms a rapidly alternating sequence with platy to blocky limestone or marble which contains frequent phyllite laminae and local silty horizons. Disseminated, nodular and laminated pyrite, or limonitic remnants after pyrite occur throughout. Sericitic phyllite (possibly indicative of hydrothermal alteration) is also found.

The uppermost sedimentary unit mapped on the claims consists of limestone, dolostone and marble, probably equivalent to the Lower Cambrian Atan Group in northern B.C. There are two main members, grey weathering, platy to blocky limestone, and buff weathering, blocky to massive dolostone. Both contain phyllitic laminae.


LOWER CAMBRIAN
300 m.+
Atan Group: Limestone, Dolostone and Marble
200-400 m
Phyllite, Limestone/Marble, Schist. Zn-Pb-Ag mineralization
40-180 m.
UPPER PRECAMBRIAN(?) TO LOWER CAMBRIAN
Quartzite and Phyllite
350 m.+
Windermere Super-Group ("Grit Unit"): Quartzite

STRATAGRAPHIC SECTION

MR CLAIMS

Modified from assessment report 091419.

Two mineral occurrences have been found. Zn-Pb-Ag mineralization of apparent stratiform nature was located by surface trenching in siliceous, gossanous phyllite in the eastern part of the claim group. In the western part of the claim block, three kill zones cover a 2,000 m^2 area. A Zn-rich linear ferricrete gossan extending approximately 70 m was found in one kill zone. Trenching revealed crudely banded limonite with smithsonite and hemimorphite. Trenching 500 m along strike revealed similar material to greater than 2.5 m thickness. A hydrozincite-depositing spring 700 m further along strike suggests a potential mineralized strike length of 3,000 m.

Current Work and Results:

In 1981, part of the property was covered with a grid soil geochemical survey, in which 1,024 soil samples were collected and analyzed for Cu, Pb, Zn, Ag and Ba. This grid was extended in 1982, when 1,475 soil samples were collected. In addition, 71 stream or seep sediment samples and 7 rock samples were collected and analyzed. Geological mapping was carried out at 1:10,000 scale, a Dighem II airborne geophysical survey of 282 line-km was flown and 4 test pits were excavated at anomalous soil locations along the west zone.

Anomalous soils contain greater than 290 ppm Pb, 1,800 ppm Zn or 2.0 ppm Ag. Three multi-element anomalous areas were defined. The most extensive were over a 1.0 km by 1.2 km area coincident with the west mineralized zone, and over 2.0 km by 1.5 km on a south zone with no surface mineralization.

The airborne survey was successful in delineating the phyllite unit. This unit has a low resistivity signature and is conductive because of the presence of graphite ± sulphides.

******

THRALL	Molybdenum
Getty Canadian	Porphyry
Metals, Limited	105 B 11 (89)
	(60°33'N,131°20'W)

Reference: D.I.A.N.D. (1982, p.97,106).

Claims: THRALL (92)

Source: Summary by P. Watson from assessment report 091051 by R.T. Holland and assessment report 091408 by N. Hulstein.

History:

A coincident Mo-W-Cu stream sediment anomaly was reported near Irvine Creek in 1979 by the G.S.C. in the U.R.P. report on 105 B. The area was staked in 1979 but no work was reported and the claims lapsed. The THRALL claims were staked in 1981, following reconnaissance follow up of the 1979 results, to cover a small granodiorite stock containing stockwork quartz-molybdenite mineralization in float and talus.

Description:

The property is located approximately 60 km north of the Alaska Highway. It lies between the Seagull and Cassiar Batholiths, and is underlain by a small, previously unmapped Cretaceous stock. This northwest-trending, dyke-like stock and associated quartz-feldspar porphyry granodiorite bodies, have intruded intercalated greenstone, metasedimentary rock, diorite and quartz diorite of Cambrian (or earlier) to Devono-Mississippian age. Quartz-feldspar porphyry and fine grained porphyritic felsite host the major part of the best quartz-molybdenite stockwork, which occurs over a length of 200 m in float and talus.

Two grab samples of mineralized vein contained 0.034% Mo with 7.89 g Ag/t and 0.009% Mo with 2.4 g Ag/t. Rusty, unmineralized quartz veins were also found. Rare grains of molybdenite were seen throughout the stock and surrounding rocks.

K-feldspar alteration envelopes are common and are strongly developed adjacent to some veins. Weak, pervasive clay, chlorite and sericite alteration is also common.

Current Work and Results:

In 1981, 700 soil, 49 stream sediment and 13 rock samples were collected and analyzed for Mo, Cu, W, Pb, Ag and F. In 1982, the sampling grid was extended to the northwest, and 220 soil and 3 stream sediment samples were collected and analyzed for Mo, Cu, W, Pb, Ag and Zn.

Values greater than 9 ppm Mo, 110 ppm Cu, 5 ppm W, 60 ppm Pb or 0.8 ppm Ag were considered anomalous. A Mo anomaly 4,500 m long by 400 m to 800 m wide closely follows the granodiorite contact. Anomalous Cu, W, Pb, F and Ag zones are generally coincident with, but less extensive than, the Mo anomalous zone. Silver anomalies were small and dispersed, correlating with Mo in the general trend only. Zinc was determined only in 1982 and a few spot anomalies were outlined.

In 1982, five additional showings of Mo in 1-3 cm wide quartz veins found in float extended the mineralized zone a further 1,200 m. Minor malachite, azurite and chalcopyrite were found in quartz veining.

A proton magnetometer survey conducted in 1982 indicated the intrusion to be approximately 1,600 m long.

******

SOURCE
SEREM Limited 105 B 11 (90)
(60°37'N,131°10'W)

Reference: D.I.A.N.D. (1982, p.97,106).

Claims: SOURCE 1-24

Source: Summary by P. Watson from assessment report 091074 by M.A. Stammers.

History:

The property was staked in 1981 to cover showings discovered while prospecting. It lies immediately south of Dayton Creek Silver Mining Limited's COM 21-26 claims and partially on ground formerly held as part of that group. G.S.C. first reported the presence of galena and sphalerite with quartz and fluorite in veinlets and disseminated in diopside and magnetite skarns. During 1975-1976, the COM group was examined by geological, geochemical and geophysical (IP) surveys, trenching and diamond drilling (806 m).

Description:

The property, located 153 km northwest of Watson Lake, covers the contact between Upper Hadrynian to Lower Cambrian schists, marbles and garnet-diopside skarn and biotite quartz monzonite to granodiorite of the Cassiar Batholith.

Current Work and Results:

Preliminary geological mapping and sampling of the property was undertaken in 1982.

******

TOD Tungsten
Hudson Bay Exploration and Development Company Limited 105 B 9 (103)
(60°37'N,130°15'W)

Claims: TOD 1-40

Current Work and Results:

Trace scheelite was found in a poorly exposed diopside skarn within Paleozoic biotite schist, close to the contact with a biotite quartz monzonite stock. Ten claims were soil sampled in 1982 and trace scheelite was found in float.

******

1982 MINERAL CLAIMS STAKED

DALE 105 B 1 (6)
Loann Silver Mines (60° 01'N,130° 27'W)

Claims 1982: POND 1-6

KODIAK 105 B 1 (13)
H. Fierro (60° 12'N,130° 17'W)

Claims 1982: DAVE 10-11

IDAHO 105 B 1 (62)
C. Wilman (60°02'N,130°25'W)

Claims 1982: G.P. 1-8

MAC 105 B 1 (84)
J. Legare (60°04'N,130°19'W)

Claims 1982: TOM 1-34

LYDIA 105 B 1 (93)
(60°03'N,130°20'W)

Claims 1982: LYDIA 1-24; FLO 1-22

CER 105 B 1, 8 (94)
S. Ridgeway (60°15'N,130°18'W)

Claims 1982: CER 1-30

OULETTE 105 B 2 (42)
N. Bastien (60°09'N,130°49'W)

Claims 1982: RAY 1-4

ANT 105 B 2 (63)
B. Poulin (60°01'N,130°32'W)

Claims 1982: A(4)

BAR 105 B 3 (23)
P. Wilman (60°10'N,131°06'W)

Claims 1982: RED 1-8

VAL B 105 B 3 (28)
Dupont of Canada (60°05'N,131°21'W)
Exploration Limited

Claims 1982: VAL 101-106

GULL 105 B 3 (82)
B. Martel (60°14'N,131°20'W)

Claims 1982: A.S. 1-49

SEA 105 B 3 (95)
BRX (60°07'N,131°08'W)

Claims 1982: SEA 1-52

PARK 105 B 3 (96)
R. Stratham (60°09'N,131°05'W)

Claims 1982: PARK 1-32

FALL 105 B 3 (97)
D. Schellenberg (60°11'N,131°09'W)

Claims 1982: FALL 1-39; LORI 1-8: LAKE 1-8

CRE 105 B 3 (98)
BRX (60°13'N,131°15'W)

Claims 1982: CRE 1-84

LOGJAM 105 B 4 (29)
A.M.P. Exploration and Mining (60°01'N,131°35'W)
Company Limited

Claims 1982: BARB 1-6Fr, 29-30

ANNI 105 B 5 (83)
J.C. Stephen Explorations Ltd. (60°23'N,131°52'W)

Claims 1982: JAR 1-9

MAR 105 B 7 (104)
BRX (60°20'N,130°39'W)

Claims 1982: MAR 1-23, 2Fr

OTH 105 B 7 (105)
(60°22'N,130°40'W)

Claims 1982: OTH 1-29

BRX 105 B 7 (106)
BRX (60 21'N,130 45'W)

Claims 1982: BRX 1-20

AURORA 105 B 7 (19)
B.A. Resources Ltd. (60°22'N,130°50'W)

Claims 1982: RINGO 9-12

BEA 105 B 7 (99)
B. Dickey (60°18'N,130°34'W)

Claims 1982: BEA 1-40

SAB 105 B 7 (100)
BRX (60°22'N,130°55'W)

Claims 1982: SAB 1-40

MEI 105 B 7 (101)
BRX (60°39'N,130°30'W)

Claims 1982: MEI 1-24

GLEN Goldex Resources Inc.	105 B 8 (102) (60° 19'N,130° 11'W)

Claims 1982: GLEN 1-12

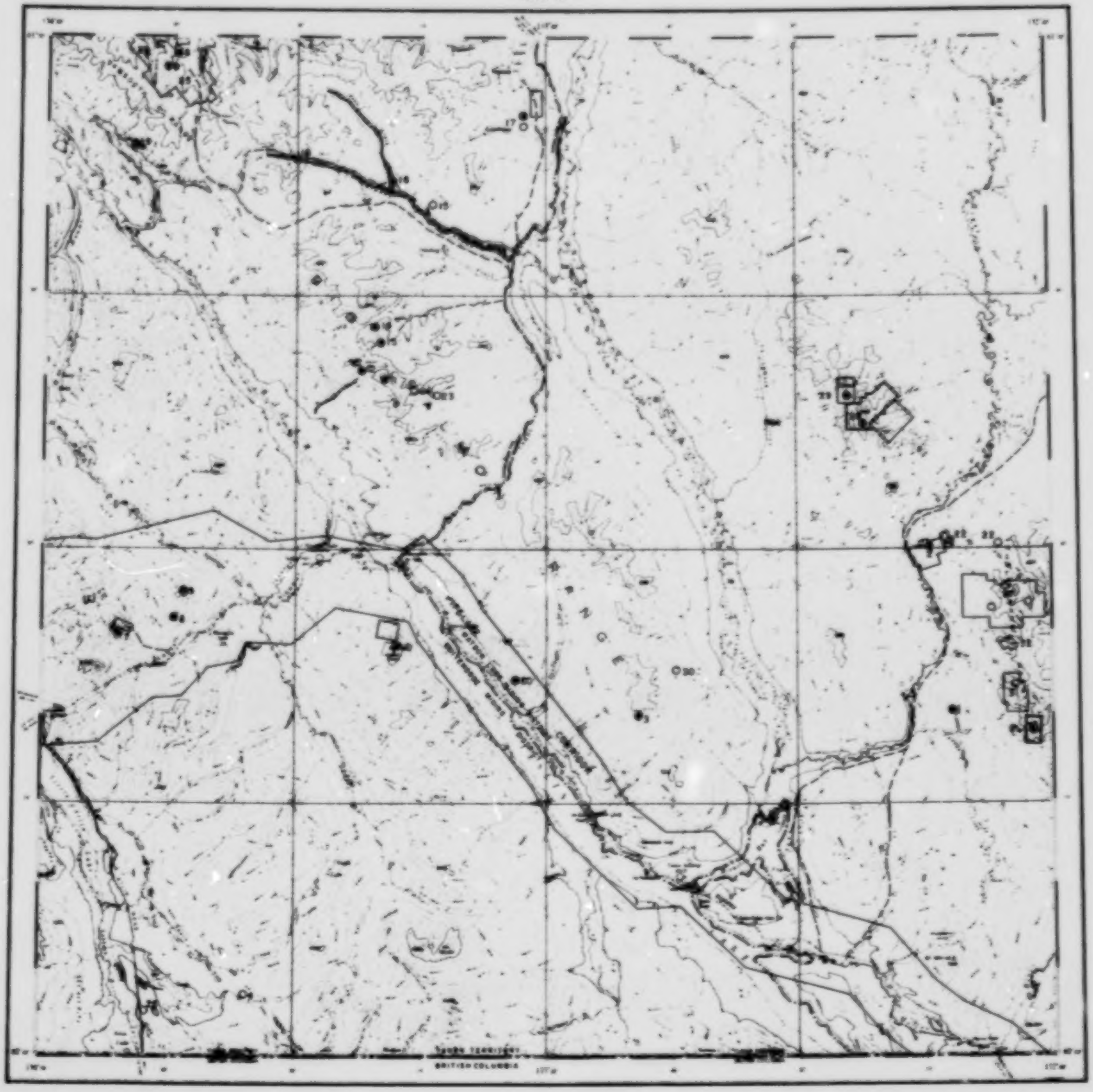
TOD Hudson Bay Exploration and Development Company Limited	105 B 9 (103) (60° 37'N,130° 16'W)

Claims 1982: TOD 1-40

******

NOTES

105 C


YUKON TERRITORY
BRITISH COLUMBIA
RANGE
17
19
23
29
30

TESLIN
YUKON TERRITORY

Kilometres 5 0 5 10 15 20 25 30 Kilometres

● .... Mineral Deposit or Occurrence see Key on facing page

○ .... Unidentified Target

▭ .... Mineral Claims in good standing (Jan. 1983) and recorded before Jan 1982

▭ .... Mineral Claims recorded in 1982

—— .... Placer Leases in good standing (Jan. 1983)

—— .... Placer Claims in good standing (Jan. 1983)

CEL .... Coal Exploration Licence

CML .... Coal Mining Lease

– – – .... Tote Trail

—— .... [illegible] Road

✦ .... Oil or Gas Well

▬ .... [illegible]

TESLIN MAP-AREA (NTS 105 C)

General Reference: GSC Map 1125A and Memoir 326 by:
R. Mulligan, 1963.

NO.	PROPERTY NAME	REFERENCE
1	KITCHEN	Silver-Lead Vein
2	SMEG (BAR)	This Report
3	LINCOLN	Mulligan (1963, p. 78)
4	TARFU	
5	SLATE (SM)	Silver-Lead-Zinc Vein
6	RED MOUNTAIN	This Report
7	RIBA	Asbestos
8	SEAFORTH	Asbestos
9	SQUANGA	Asbestos
10	HAYES PEAK	Mulligan (1963, p. 78); D.I.A.N.D. (1982, p. 111)
11	GUNSIGHT	D.I.A.N.D. (1981, p. 162)
12	MOOSE HILL	Lees (1936, p. 24); D.I.A.N.D. (1982, p. 111)
13	MARLIN	Manganese Occurrence
14	MT. GRANT	Copper Vein
15	DRY	
16	IRON CREEK	Silver-Gold Occurrence
17	LINDSAY	D.I.A.N.D. (1981, p. 162)
18	SIDNEY	Mulligan (1963, p. 77)
19	ROSY	Bostock (1936, p. 6)
20	DEADMAN	Silver-Lead Vein
21	JACKALOO (McCLEERY)	This Report
22	ABBA	This Report
23	FORSURE	D.I.A.N.D. (1981, p. 162)
24	CHRIS	D.I.A.N.D. (1981, p. 162)
25	NW	This Report
26	LISA	D.I.A.N.D. (1981, p. 162)
27	MICH	D.I.A.N.D. (1981, p. 162)
28	ORK	This Report
29	MINDY	This Report
30	STARTIP	Morin et al (1979, p. 78-79)
31	DB	This Report
32	BAS	D.I.A.N.D. (1982, p. 111)
33	GRIZZLY	This Report
34	SAYEH	This Report

SMEG
Chevron Canada Limited

Lead,Zinc,Silver,
Barite Stratabound
105 C 8,9 (2)
(60°38'N,132°22'W)

References: D.I.A.N.D. (1982, p.109,111); D.I.A.N.D. (1981, p.161).

Claims: BAR (44)

Source: Summary by P. Watson from assessment report 091382 by D. Shaw and C.V. Dyson.

Current Work and Results:

In 1982, 708 soil samples were collected on a 50 m by 100 m grid, and analyzed for Zn, Pb, Ag and Ba. Zinc soil anomalies were located in the south and central parts of the claims. These were separate from Pb-Ag-Ba anomalies outlined in the central part of the claim block. Anomalous Pb, Ag and Ba zones were either adjacent to or superposed on each other and are believed to indicate the location of baritic strata hosting argentiferous galena. Separate Zn anomalous values are attributed to greater mobility of Zn in groundwater.

******

RED MOUNTAIN

Amoco Canada Petroleum
Company Limited;
Tintina Mines Ltd.

Molybdenum
Porphyry
105 C 13 (6)
(60°59'N,133°45'W)

References: D.I.A.N.D. (1982, p.3,8,12,16,18,19,109).

Claims: BUG; GUB; SM

Source: Summary by P. Watson from assessment report 091392 by P. Brown.

Current Work and Results:

Detailed diamond drill logs were submitted for three holes drilled in 1982. These holes totalled 2,988.2 m and intersected porphyritic quartz monzonite and chloritic quartz-eye diorite (granodiorite porphyry), as well as various dykes. Quartz veins up to 3 cm in width were reported as well as quartz stockwork and breccia. Oxidized, sericitic and potassic alteration zones were intersected. The entire core was assayed for MoS_2 and Cu in 3 m sections.

******

JACKALOO (McCLEERY)

J.C. Stephen
Explorations Limited;
D.C. Syndicate

Copper,Iron Skarn
105 C 8 (21)
(60°19'N,132°02'W)

Reference: Sinclair *et al* (1976, p.161).

Claims: CAL 3-26

Source: Summary by P. Watson from assessment report 091447 by J.C. Stephen.

History:

JACKALOO and SURETHING were staked in 1974 and examined with geological and geochemical surveys. The CAL claims were staked in 1982 to cover rocks found to be anomalous in Sn and W in a 1981 regional program.

Current Work and Results:

The property is located 42 km northeast of Teslin and is underlain by phyllite, greenstone, limestone/marble/skarn, siliceous argillite and argillaceous quartzite intruded by granite of the Hake Batholith. The limestone unit is discontinuous and ranges from 30 m to 100 m in thickness. It has been altered to a calc-silicate assemblage near the contact with granitic intrusions.

Three main skarn zones and many small 1-2 m pods were mapped. Towards the north end of the claim block, actinolite-tourmaline-garnet skarn is exposed for 125 m with a maximum thickness of 80 m. An inner zone of this skarn contains magnetite, pyrrhotite and minor chalcopyrite. No significant Sn or W values were reported. A magnetite-chalcopyrite-sulphide skarn is found above and below a 30 m thick limestone lens. The upper zone is 3 m by 30 m and the lower zone is 1.3-2.0 m by 30 m. Elsewhere a mixed zone c phyllite, quartzite and skarn is copper-stained. T the southeast, a chalcopyrite-bornite skarn is expose for 7 m by 5 m. Pink cobalt bloom occurs in the skar and surrounds small blebs of sulphide in limestone t the east of the skarn.

Near the outcrops of calc-silicate and lime stone, veinlets of hematite, magnetite and coppe sulphides occur in phyllitic sediments.

No significant Sn or W values were found durin this study.

******

ABBA

J.C. Stephen
Explorations Limited;
D.C. Syndicate

Iron Skarn
105 C 9 (22
(60°31'N,132°12'

Reference: D.I.A.N.D. (1981, p.161).

Claims: ABBA 1-8

Source: Summary by P. Watson from assessment report 091448 by J.C. Stephen.

History:

Eight claims were staked in 1982 subsequent the lapsing of the ABBA claims of Urangesellscha Canada Ltd. The claims cover a magnetite skarn fou in 1980 at the west contact of the Hake Batholith.

Current Work and Results:

Reconnaissance mapping, magnetometer and so geochemical surveys were conducted in 1982. Th property is underlain by siltstone, chert, limeston argillaceous quartzite, tuff, andesite and volcan breccia which have been intruded by biotite granite the Hake Batholith and porphyritic granite a pegmatite.

Several types of skarn were mapped, includin massive magnetite; mixed magnetite and green garne green garnet; red and green garnet; and wollastoni skarns. The small wollastonite and garnet skar contain no sulphides, magnetite or scheelite. Sampl contained up to 50 ppm Sn and up to 60 ppm Zn.

Two outcrops of magnetite skarn were ch sampled over 6 m and 3.6 m along strike. The samples contained 0.28% Sn and 0.19% Sn, respectively

Elsewhere on the property, 7 cm to 13 cm wi veins containing quartz, limonitic boxwork and so galena assayed up to 0.97% Pb and 48 g Ag/t.

The magnetometer survey indicated that t magnetite skarn body extends for 120 m with a width 10 m.

Thirty-three soil samples were analyzed for S W, As and Pb. They generally contained very l values.

******

NW
Yukon Revenue Mines Limited
Molybdenum, Copper
105 C 13 (25)
(60°57'N,133°46'W)

References: D.I.A.N.D. (1982, p.111), Craig and Laporte (1972, p.123).

Claims: YR (28)

Source: Summary by P. Watson from assessment report 090937 by G.C. Lee.

Current Work and Results:

The property is located 50 km northeast of Whitehorse, adjacent to the Red Mountain property. The YR claims were staked in 1981. In 1982, soil geochemical and magnetometer surveys were conducted to follow up a soil geochemical program carried out in 1970 by Hudson Bay Oil and Gas Co. Ltd. on the NW, RH and XY claims.

A total of 283 soil samples and 36 rock samples were collected and analyzed for Cu, Mo and Ag. Rocks were also analyzed for Pb, and, in some cases, Au. Two distinct Mo soil anomalies, with some coincident high Cu and Ag values, were outlined. Magnetic anomalies often showed linear trends corresponding to the strike of the underlying bedrock.

******

ORK
J.C. Stephen
Explorations Limited;
D.C. Syndicate
Tin,Tungsten Skarn
105 C 9 (28)
(60°38'N,132°22'W)

References: D.I.A.N.D. (1982, p.109,110); D.I.A.N.D. (1981, p.162).

Claims: ORK 1-44

Source: Summary by P. Watson from assessment report 091364 by R. Campbell and J.C. Stephen.

History:

Anomalous Cu and Zn values in stream sediments were found in the area in 1976. The ORK claims were staked in 1979 to cover these locations and an arsenopyrite-bearing skarn. In 1980 and 1981, reconnaissance mapping and geochemical sampling programs were undertaken. Additional claims were added in 1982.

Description:

The property is located 35 km northeast of Teslin. An argillaceous quartzite unit containing disseminated pyrrhotite also hosts two conformable horizons up to 30 cm thick of massive pyrrhotite and chalcopyrite. The main marble unit contains thin skarn beds at its upper and lower contacts. These contain garnet, massive arsenopyrite and some pyrite, pyrrhotite, chalcopyrite, molybdenite and fluorite. The carbonate unit is overlain by argillaceous quartzite, quartzite and argillite units and the entire package is intruded by aplitic leucogranite and pegmatite dykes. A chert pebble conglomerate found in the area is believed to be a fault block or a landslide mass.

In addition to the small skarn zones of massive arsenopyrite with pyrite, pyrrhotite and molybdenite, magnetite garnet skarn was found in float.

Current Work and Results:

Geophysical and geochemical programs were conducted in 1982. The magnetometer survey delineated small skarn zones, the pyrrhotite-chalcopyrite horizons and possible magnetite skarn. VLF-EM and MAX-MIN EM anomalies occur over the small skarn zones, but no EM anomalies were delineated over the magnetite skarn or the pyrrhotite-chalcopyrite mineralization.

In 1982, 350 soil samples and 46 rock samples were collected. Soils were tested for Sn, W, Cu and Zn while rocks were tested for Cu and Sn, and in some cases Au and Ag. Soil samples generally contained low values in all elements. Much of the area is masked by glacial overburden. Anomalous W values were scattered and a few anomalous Sn values were found in the vicinity of the skarn. Moderately anomalous Zn and Cu values occur in a talus-covered area. Elsewhere, scattered anomalous Zn values were noted.

******

MINDY
Newmont Exploration
of Canada Limited
Tungsten,Tin Skarn
105 C 9 (29)
(60°37'N,132°20'W)

References: D.I.A.N.D. (1982, p.8,12,109,110,111); D.I.A.N.D. (1981, p.162).

Claims: MINDY (33)

Source: Summary by P. Watson from assessment report 091415 by H. Limion.

Current Work and Results:

In 1982, Dighem airborne EM and magnetometer surveys and follow-up ground geophysical surveys were conducted. Twenty-three line-km of magnetometer and horizontal loop MAX-MIN EM were surveyed on two grids. One grid produced weak magnetic conductors. Two moderately magnetic conductors were delineated on the other grid, one north and the other south dipping.

******

DB
J.C. Stephen
Explorations Limited;
D.C. Syndicate
Tin,Tungsten Skarn
105 C 8 (31)
(60°22'N,132°05'W)

Reference: D.I.A.N.D. (1982, p.109,110,111); Morin et al (1980, p.59).

Claims: FF 1-46

Source: Summary by P. Watson from assessment report 091371 by J.C. Stephen and M.P. Webster.

Current Work and Results:

In 1981, sampling of the main skarn zone returned values of 0.078% to 0.216% Sn and 0.046% to 0.097% WO_3 over 2.1 m to 7.19 m along a length of 640 m. In 1982, a detailed geological program was completed, and a restricted magnetometer survey was conducted.

The lowermost unit on the property is a quartz plagioclase porphyry interpreted as a coarse grained volcanic flow. Above this, interbedded siltstone, tuff and agglomerate contains thin bands of green skarn. There is a sharp contact between this unit and the main skarn unit. The skarn has been traced for 810 m. It consists of a red garnet plus epidote layer, which grades to the east into red garnet and then into magnetite skarn, separated from a green garnet skarn by a thin, intermittent limestone layer. Lenses of pyrrhotite with chalcopyrite and arsenopyrite occur in the red garnet skarn. A massive to bedded limestone unit, with occasional calc-silicate and weakly developed skarn bands is found above the skarn zone. Units of argillaceous quartzite, tuff and andesite, cherty quartzite, limestone, chert pebble conglomerate and phyllite were mapped above the limestone and skarn horizons. Quartz feldspar biotite granite of the Hake Batholith and a K-feldspar porphyry granite plug also occur on the property. The entire sequence may be overturned.

Mineralization in the main skarn consists of pyrrhotite with lesser chalcopyrite, arsenopyrite and pyrite in red or green garnet, or magnetite skarn.

Seven small skarns were located. These contain more pyrite than the main skarn, and, in some cases, trace amounts of Au. Some of these are red garnet and magnetite skarns. One contained red and green garnet. Others were tourmaline or calc-silicate skarns. Up to 1,100 ppm Sn and 600 ppm W were reported from one of the skarns. A grab sample of a rusty zone with copper staining and quartz returned 18.8 ppm Ag, 80 ppb Au, 50 ppm W and 330 ppm Sn.

******

SAYEH	Geochemical Target
Du Pont of Canada	105 C 6 (34)
Exploration Limited	(60°35'N,133°18'W)

References: D.I.A.N.D. (1982, p.111).

Claims: SAYEH 1-25

Source: Summary by P. Watson from assessment report 091041 by J.T. Neelands.

History:

The claims were staked in 1981 to cover the drainage of a stream containing anomalous values of Au in stream sediments found during a regional sampling program.

Description:

The claims are located 62 km southeast
Whitehorse, on the west side of Teslin Lake and
north side of Hayes Peak. The claims lie within
Intermontane Belt of sedimentary and volcanic ro
which have been intruded by small plutons of Lo
Cretaceous Coast Intrusions and, near the Teslin
Naklin sutures, by small alpine-type ultramafic bodi

Current Work and Results:

The property is underlain by massive, aphani
to porphyritic, Permian to Triassic basalt, wi
Cretaceous granodiorite and Jurassic or Cretace
peridotite exposed to the south. The or
mineralization noted was some malachite staining in
peridotite sample.

Two rock and 6 stream sediment samples we
collected on the property during 1981. The origin
anomalous sample contained 800 ppb Au in the hea
mineral fraction. Two additional anomalous stre
sediment samples containing up to 205 ppb Au we
located in a tributary stream, upstream of t
original sample location, but, to date, no geologic
explanation for the anomalous values has been found.

******

GRIZZLY	Unmineralized
Aurun Mines Ltd.;	Target
Atlantic Energy Corp.;	105 C 13 (3
Westfort Petroleums Ltd.;	(60°58'N,133°45'
Delta Petroleum Ltd.;	
Corsair Petroleum Ltd.	

References: D.I.A.N.D. (1982, p.109,111).

Claims: GRIZZLY (28); BEAR (56)

Source: Summary by P. Watson from assessment reports 091034 and 091035 by A.S. Denton and assessment report 091380 by R.G. Hilker.

History:

Two claims blocks were staked in 1981, to th
south (GRIZZLY) and southwest (BEAR) of the Re
Mountain porphyry molybdenum deposit, to cove
possible extensions of that zone.

Description:

The area is underlain by slate, schist,
quartzite and related gneiss of the Big Salmo
Complex, which have been intruded by quartz-feldspa
porphyry stocks of late Cretaceous to Tertiary age.

Current Work and Results:

In 1981, 235 soil samples and 39 stream sediment
samples were collected and analyzed for Cu, Pb, Mo and

Zn. Small Cu and Zn anomalies were outlined on the BEAR claims and a small, slightly anomalous area of Mo, Zn and Pb was found on the GRIZZLY claims. No outcrop was mapped on the property, and no mineralization was reported.

******

1982 MINERAL CLAIMS STAKED

JACKALOO (McCLEERY) 105 C 8 (21)
J.C. Stephen Explorations Ltd. (60°19'N,132°01'W)

Claims 1982: CAL 1-26

ABBA 105 C 9 (22)
J.C. Stephen Explorations Ltd. (60°31'N,132°12'W)

Claims 1982: ABBA 1-8

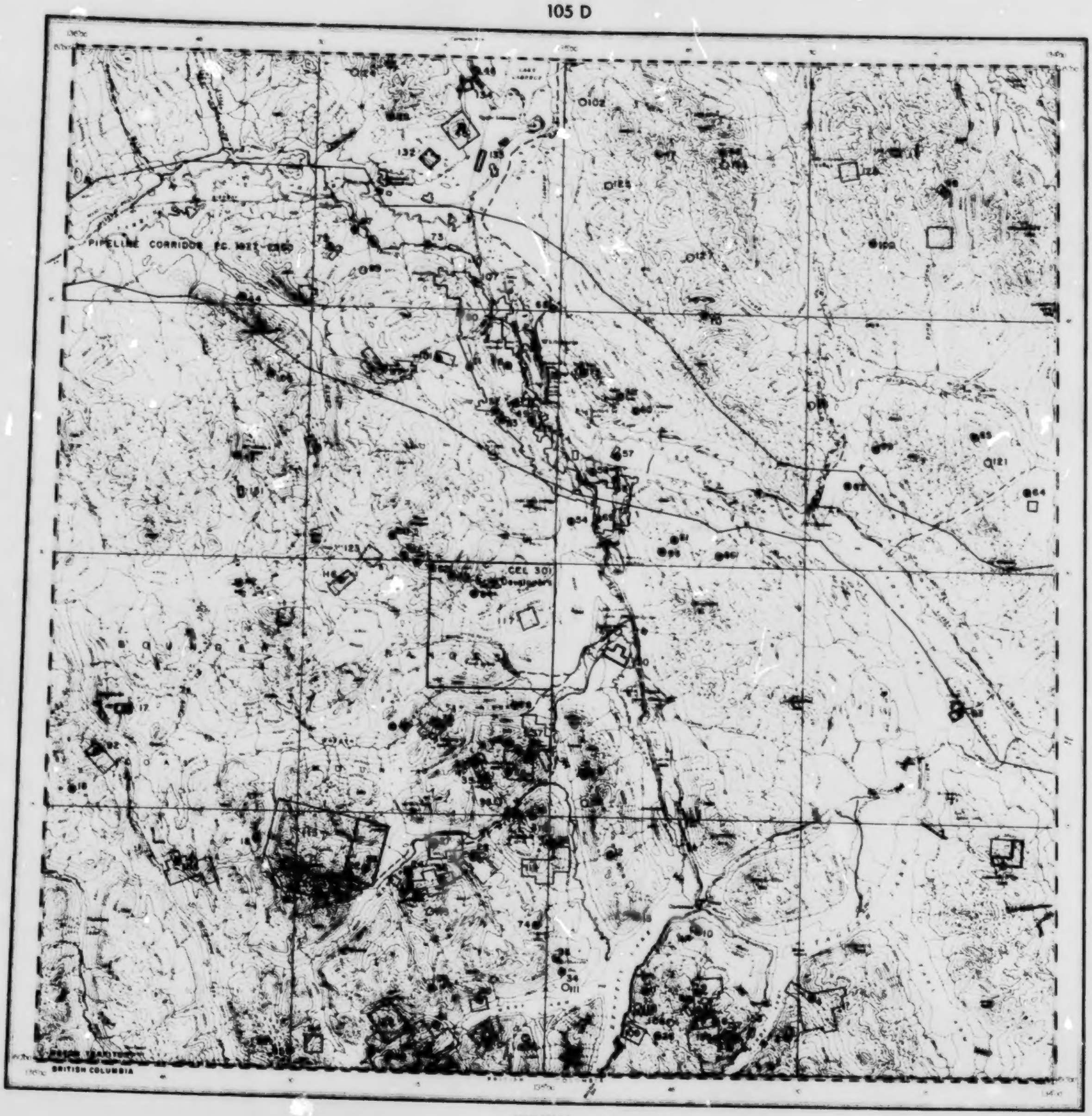
ORK 105 C 9 (28)
J.C. Stephen Explorations Ltd. (60°38'N,132°22'W)

Claims 1982: ORK 37, 38Fr, 39-44

MINDY 105 C 9 (29)
Newmont Exploration of Canada Ltd. (60°39'N,132°20'W)

Claims 1982: MINDY 65-89, 90Fr, 94-97; JILL 1-8

******


105 D
PIPELINE CORRIDOR
CEL 301
YUKON TERRITORY
BRITISH COLUMBIA

MAP 953A

WHITEHORSE

YUKON TERRITORY

Kilometres 5 0 5 10 15 20 25 30 Kilometres
Mineral Deposit or Occurrence see Key on facing page
Unclassified Target
Mineral Claims in good standing (Jan. 1983) and staked before Jan. 1982
Mineral Claims staked in 1982
Placer Leases in good standing (Jan. 1983)
Placer Claims in good standing (Jan. 1983)
CEL Coal Exploration Licence
CML Coal Mining Lease
Tote Trail
Driveable Road
Oil or Gas Well
Airstrip

WHITEHORSE MAP-AREA (NTS 105 D)

General Reference: GSC Map 1093A and Memoir 312 by: J.O. Wheeler, 1961.

NO.	PROPERTY NAME	REFERENCE
1	JUBILEE	This Report
2	LULU	Findlay (1969b, p. 39)
3	MILLET	Copper
4	LIME	D.I.A.N.D. (1981, p. 165)
5	VENUS	D.I.A.N.D. (1982, p. 7,18,113, 116)
6	MONTANA	Findlay (1969a, p. 60-61)
7	THISTLE	Gold-Silver-Lead-Zinc-Copper Vein
8	JEAN	Green & Godwin (1964, p. 39-40); Findlay (1969a, p. 61)
9	BIG THING (ARCTIC)	D.I.A.N.D. (1981, p. 167)
10	CARCROSS	Findlay (1969a, p. 62); D.I.A.N.D. (1982, p. 117)
11	KNOB HILL	Bostock (1941, p. 143)
12	WABONA	Zinc Vein
13	COLLEGE GREEN	Copper Vein
14	FINGER	Copper Occurrence
15	LATREILLE	D.I.A.N.D. (1981, p. 165)
16	PRIMROSE	Skarn Zinc; D.I.A.N.D. (1982, p. 117)
17	ROSE	This Report
18	BOSTOCK	Bostock (1941, p. 38)
19	CHARLESTON	D.I.A.N.D. (1982, p. 114)
20	BERNEY	D.I.A.N.D. (1981, p. 166,168)
21	MT. REID	D.I.A.N.D. (1982, p. 114)
22	SKUKUM	Findlay (1969a, p. 56-57); Craig & Milner (1975, p. 55)
23	MORNING	Bostock (1941, p. 36-37); D.I.A.N.D. (1982, p. 117)
24	GODDELL	Morin et al (1977, p. 150)
25	PORTER	Bostock (1941, p. 37-38); D.I.A.N.D. (1981, p. 168)
26	BECKER-COCHRAN	Morin et al (1977, p. 149)
27	FLEMING	Morin et al (1977, p. 150)
28	MT. ANDERSON	D.I.A.N.D. (1981, p. 166); D.I.A.N.D. (1982, p. 117)
29	TALLY-HO	Wheeler (1961, p. 123)
30	MT. WHEATON	Wheeler (1961, p. 122-123)
31	BUFFALO	D.I.A.N.D. (1982, p. 117)
32	MT. STEVENS	D.I.A.N.D. (1982, p. 115)
33	CROMWELL	Silver-Lead-Copper Vein; D.I.A.N.D. (1982, p. 117)
34	MILLHAVEN	D.I.A.N.D. (1982, p. 117)
35	GOLD HILL	Cairnes (1916, p. 43)
36	GOLD REEF	Wheeler (1961, p. 123); Cairnes (1912, p. 111-112)
37	UNION MINES	Wheeler (1961, p. 135-136)
38	MT. BUSH	Cairnes (1916, p. 145-147)
39	LEGAL TENDER	Cairnes (1912, p. 112-113)
40	ALLIGATOR	Craig & Milner (1972, p. 44)
41	WHITEHORSE COAL	Craig & Laporte (1972, p. 158)
42	MUD	Findlay (1969a, p. 54-55)
43	ARKELL	Craig & Milner (1975, p. 43)
44	INGRAM	Wheeler (1961, p. 136-137)
45	CUTOFF	Silver-Gold Vein; D.I.A.N.D. (1982, p. 118)
46	EFFIE	Asbestos
47	POW	D.I.A.N.D. (1981, p. 166)
48	ACE	Silver-Gold-Lead-Zinc-Copper Vein; D.I.A.N.D. (1982, p. 118)
49	WHITEHORSE COPPER	This Report
50	TREMAR	Craig & Laporte (1972, p. 113)
51	WING	
52	QUINALTA	Skarn Copper
53	POLAR	Kindle (1964, p. 35-36)
54	VAL	Copper-Molybdenum Occurrence
55	DUGDALE	Findlay (1969a, p. 54)
56	TOPAZIOS	Findlay (1969b, p. 34)
57	LEWES RIVER	Findlay (1969b, p. 34-35)
58	WALCOTT	
59	GOLCONDA	Copper-Silver-Lead Vein
60	GRONK	Skarn Copper
61	NIP	Skarn Copper
62	M'CLINTOCK	Wheeler (1961, p. 143); Craig & Milner (1975, p. 45)
63	MARSH	This Report
64	LAVALEE	Asbestos
65	MICHIE	Chromium-Asbestos Magmatic
66	RAILROAD	Silver Vein
67	JACKSON (GROUSE)	Craig & Milner (1975, p. 52); Sinclair et al (1976, p. 101)
68	IMP	Copper Occurrence
69	BUCHANAN	D.I.A.N.D. (1981, p. 168)
70	WHEELER	
71	HARNIAK	Copper-Silver-Gold Vein
72	SHAW	D.I.A.N.D. (1982, p. 116,117)
73	ALLISON	
74	OPULENCE	Antimony Vein
75	BOBO	
76	DONKEY	Silver-Lead-Zinc-Gold-Copper Vein; D.I.A.N.D. (1982, p. 117)
77	DAWN	
78	INCO	Copper-Molybdenum Porphyry
79	SUITS (KING LAKE)	Sinclair et al (1975, p. 144-145)
80	FISH LAKE	Coal
81	LUSCAR	Coal
82	PTARMIGAN	Cairnes (1908, p. 20-21)
83	COAL RIDGE	Coal
84	BERESFORD	Cairnes (1908, p. 20-21)
85	BOUDETTE	Wheeler (1961, p. 143)
86	COMBS	Gold Vein
87	MIDGETT	Copper Vein
88	GEE	D.I.A.N.D. (1981, p. 168)
89	TONY	Lead-Silver-Zinc Vein; D.I.A.N.D. (1982, p. 118)
90	WEST	D.I.A.N.D. (1981, p. 166)
91	PART	D.I.A.N.D. (1981, p. 167)
92	PROSE (DEB)	This Report
93	POMPEI	D.I.A.N.D. (1981, p. 168)
94	LORNE	D.I.A.N.D. (1981, p. 168)
95	JAVA	D.I.A.N.D. (1981, p. 168)
96	GAMMON	This Report
97	ART	D.I.A.N.D. (1981, p. 167)
98	MUNROE	D.I.A.N.D. (1981, p. 167)
99	UNTILL	Sinclair et al (1976, p. 104)
100	ABI	Sinclair et al (1976, p. 108)
101	TOP	Morin et al (1979, p. 61)
102	LABE	D.I.A.N.D. (1982, p. 118)
103	CRO	Morin et al (1980, p. 33)
104	BEN	Morin et al (1980, p. 33)
105	RAM	This Report
106	RAMING	Morin et al (1980, p. 36)

107	OJ	Morin et al (1980, p. 36)
108	ATHES	D.I.A.N.D. (1982, p. 116)
109	DUNK	This Report
110	UNDAL	D.I.A.N.D. (1982, p. 117)
111	TROLL	D.I.A.N.D. (1982, p. 117)
112	ODD	This Report
113	BACHUS	D.I.A.N.D. (1982, p. 117)
114	NAIAD	This Report
115	KUKU	This Report
116	DAYIR	This Report
117	EVIEW	This Report
118	TIKA	D.I.A.N.D. (1982, p. 117)
119	ILLIA	D.I.A.N.D. (1982, p. 117)
120	AMN	D.I.A.N.D. (1982, p. 117)
121	ICHIE	D.I.A.N.D. (1982, p. 118)
122	ALBATROS	D.I.A.N.D. (1982, p. 117)
123	BEXI	D.I.A.N.D. (1982, p. 118)
124	FLAT	D.I.A.N.D. (1982, p. 118)
125	ERGE	D.I.A.N.D. (1982, p. 118)
126	UNCER	D.I.A.N.D. (1982, p. 118)
127	SLEWE	D.I.A.N.D. (1982, p. 118)
128	UTSHIG	This Report
129	GLENLIVET	This Report
130	RAVEN	This Report
131	MINK	This Report
132	LAKE	This Report
133	POOLY	This Report
134	A+B,C+D	This Report
135	OLLIE	This Report
136	JOE PETTY	Bostock (1957, p. 151-156,211-213,252-256,606-609)
137	URANUS	Bostock (1957, p. 151-156,211-213,252-256,606-609)
138	M & M	Bostock (1957, p. 151-156,211-213,252-256,606-609)

ROSE
Cominco Limited

Unmineralized
Target
105 D 5 (17)
(60°21'N,135°51'W)

Reference: D.I.A.N.D. (1981, p.164,167; note that ROSE group described on p.165 is actually PROSE(#92) not ROSE).

Claims: PRIMROSE 1-8

Source: Summary by P. Watson from assessment report 091440 by L.G. Nagy.

History:

The claims were staked to cover a reported gold occurrence in pyritic rhyolite, approximately 60 km southwest of Whitehorse. The showing was discovered by T. Worbets in 1949 and first staked in 1962 as the ROSE claims. It was restaked in 1967 as DOT, in 1973 as SHEEP, in 1979 as TIPY and BAR and in 1982 as PRIMROSE.

Description:

The PRIMROSE claims were found to be underlain by medium to fine grained diorite, containing small xenoliths of Paleozoic metasedimentary rocks and cut by a 3 m wide diabase dyke.

Current Work and Results:

In addition to geological mapping, 14 stream sediment samples, 21 soil samples and 10 rock chip samples of quartz boulders were collected and analyzed for Cu, Pb, Zn, Ag and Au.

******

WHITEHORSE COPPER
Whitehorse Copper
Mines, Limited

Copper, Gold,
Silver Skarn
105 D 10,11,14(49)
(60°40'N,135°10'N)

References: D.I.A.N.D. (1982, p.3,8,16,113,115);
D.I.A.N.D. (1981, p.4,22,24-25);
Tenney (1981).

Claims: Approximately 700 claims

Source: Summary by P. Watson from assessment report 091394 by A. Hureau.

SUMMARY OF OPERATIONS OF WHITEHORSE COPPER MINES LIMITED

	1978	1979	1980	1981	1982
Tonnes Mined	841,406	849,362	778,184	748,833	820,070
Tonnes Milled	782,992	829,455	772,864	727,615	814,145
Daily Average Milled (Tonnes)	2,194	2,278	2,367	2,040	2,401
Mill Heads:					
Copper (%)	1.40	1.12	1.58	1.42	1.39
Gold (gm/tonne)	0.75	0.58	0.86	1.03	
Silver (gm/tonne)	7.76	6.33	9.48	9.26	
Metal Production:					
Copper (kg)	9,490,632	7,931,060	10,728,041	9,088,284	9,040,730
Gold (gm)	541,814	492,951	687,439	489,165	364,267
Silver (gm)	5,524,950	5,255,598	7,473,336	6,045,370	6,497,695
Ore Reserves at Year End:					
Tonnes	2,387,462	2,096,525	1,671,051	1,325,000*	
Copper (%)	1.57	1.50	1.40	1.35	
Gold (gm/tonne)	0.79	0.79	0.79	1.03	
Silver (gm/tonne)	7.87	7.87	7.87	9.26	

---

* as of December 31, 1981.

History:

The Whitehorse Copper Belt is a 30 km long zone of over 30 copper-bearing skarn occurrences, located to the west of Whitehorse, Yukon Territory.

Sporadic mining took place in the belt in the early 1900's. By 1967, the ground had been consolidated under New Imperial Mines Ltd., and production from the Little Chief pit commenced.

The company was reorganized and renamed Whitehorse Copper Mines Ltd. in 1971 and underground development work began on the Little Chief ore body. In 1978, Whitehorse Copper Mines Ltd. became a wholly owned subsidiary of Hudson Bay Mining and Smelting Co. Ltd. Production from 1971 to 1982 was mainly from underground workings on the Little Chief orebody.

On December 31, 1982, production on the property ceased due to the depletion of ore in the underground workings. Between 1967 and Dec. 31, 1982, New Imperial Mines Ltd. - Whitehorse Copper Mines Ltd. milled 10,247,986 tonnes of ore. From this, they recovered 123,145,041 kg Cu, 7,062,431 gm Au and 89,577,047 gm Ag. The bulk of this ore came from the Little Chief deposit (see map on the front cover), which contained about 7.25 million tonnes grading 1.5% Cu.

Current Work and Results:

In 1982, five diamond drill holes were completed on the North Star property for a total of 2,321.97 m. Intersections over 10.2 m of 1.49% Cu and over 14.0 m of 0.83% Cu were reported from one hole. Other holes intersected smaller sections of bornite, chalcopyrite and magnetite skarn mineralization.

******

MARSH
G. McLeod

Nickel, Cobalt,
Copper Magmatic;
Gold
105 D 8 (63)
(60°22'N,134°12'W)

Reference: D.I.A.N.D. (1982, p.113,117).

Claims: FM 1-3; MF 1-4

Source: Summary by P. Watson from assessment report 091412 by G. Macdonald.

History:

The MF and FM claims were staked in 1981 on a property that was drilled in 1972. Analysis of this core indicated low grade Au values (1.58 and 1.99 g Au/t) in fractured and altered volcanic rocks.

Description:

The property covers the contact between Laberge series greywacke and quartzite and older, Taku Group(?) volcanic rocks. All units are cut by dykes and are well faulted. A large lens of serpentinized peridotite, probably a dyke or sill, is enclosed in the volcanic rocks. It has been intensely sheared and contains occasional brittle cross-fibre asbestos veinlets near zones of intense serpentinization and minor magnetite and chromite.

Current Work and Results:

Geological mapping revealed that the contact between volcanic and sedimentary rocks is represented by a depression (possibly a fault) and sedimentary rocks several hundred metres from this zone are undeformed. The volcanic rocks are strongly carbonatized near the base over a 100 m by 2,500 m area. The mariposite-fuchsite bearing rock contains quartz and carbonate (siderite and calcite) vein swarms and up to 10% disseminated pyrite, less than 1% arsenopyrite and occasional chalcopyrite and chromite. Veinlets are 1 to 2 cm wide and constitute up to 75% of the rock. The Au values in the core samples appear to be related to a unit not seen in outcrop, between the mariposite bearing unit and the volcanic/serpentinized rocks above it. A restricted magnetometer survey indicated that this zone has a distinctive magnetic signature.

******

PROSE (DEB)
United Keno Hill
Mines Limited

Lead, Zinc, Silver
Skarn
105 D 5 (92)
(60°18'N,135°54'W)

Reference: D.I.A.N.D. (1981, p.165, see ROSE).

Claims: DEB 1-28

History:

This property was described in the 1979-1980 Yukon Geology and Exploration Report and incorrectly called ROSE (#17). The correct latitude, longitude and location number for this property are given above.

******

GAMMON
Agip Canada Limited

Geochemical Target
105 D 16 (96)
(60°52'N,134°13'W)

Reference: D.I.A.N.D. (1982, p.113,116,118).

Claims: GAMMON (36)

Source: Summary by P. Watson from assessment reports 091068 and 091390 by P.D. Van Angeren.

Description:

The property is located 7 km south of Mount Byng and outside the eastern edge of the Tertiary Mount Byng volcanic complex. GAMMON 1-6 are underlain by massive hornblende granodiorite.

Current Work and Results:

Work in 1982 consisted of geological mapping and soil, stream sediment and rock sampling.

******

RAM
Canadian Nickel Company
Limited

Zinc,Lead,Silver
Skarn
105 D 4 (105)
(60°12'N,135°43'W)

Reference: D.I.A.N.D. (1982, p.113,117);
D.I.A.N.D. (1981, p.123,127);
Morin et al (1980, p.34-35).

Claims: RAM (58)

Source: Summary by P. Watson from assessment report 091086 by E.J. Debicki and assessment report 091383 by W.O. Manson.

History:

These skarns were first staked by E. Kreft in 1976 as the RAM 1-8 claims and were optioned to United Keno Hill Mines Limited from 1977 to 1979. During this time, geological, geochemical, geophysical and trenching programs were conducted. RAM 1-10 were optioned to Canadian Nickel Company Limited in 1980. In 1980, one diamond drill hole was completed to a depth of 52.7 m. Trenching and geochemical sampling were undertaken in 1981 and 1982. RAM 11-58 were staked in 1981 to cover zones of kaolinization, sericitization, carbonatization, silicification and shattering in nearby Tertiary rhyolitic quartz feldspar porphyry.

Description:

The property is located 70 km southwest of Whitehorse, to the east of Primrose Lake. The area is underlain by pre-Mississippian Yukon Group metasedimentary rocks, Cretaceous Coast Intrusions, early Tertiary Skukum Group volcanic rocks and late Tertiary quartz feldspar porphyry plugs. Small skarn zones up to 15 m in length occur in the Yukon Group metamorphic rocks over an area of 275 m by 185 m, adjacent to quartz feldspar porphyry. These skarns, consisting of sphalerite and galena in epidote-diopside-garnet-quartz-carbonate, contain values up to 1.49% Pb, 2.26% Zn and 37 g Ag/t over 3 m (chip sample). IP geophysical anomalies were attributed to graphitic schists.

Current Work and Results:

One drill hole to 52.7 m was drilled in 1980 to test a skarn zone at depth. It intersected 4.9 m of 3.73% Pb, 3.80% Zn and 25.4 g Ag/t.

A small soil geochemistry grid sampled in 1982 confirmed earlier results. Two trenches totalling 23.8 m in length were excavated on either side of the 1980 drill hole. One encountered 8.2 m of mineralized skarn assaying 0.82% Pb, 0.85% Zn and 16.5 g Ag/t.

In 1982, work concentrated on RAM 11-58. Four zones of alteration were outlined, three in quartz feldspar porphyry and one in rhyolitic volcanic rocks. The first three are extensive zones up to 200 m by 600 m of yellow-brown gossan containing narrow (up to 2 m), sheared and brecciated zones with varying amounts of clay alteration, sericite and quartz veinlet stockwork. Minor base metal sulphides were reported in one zone. The fourth zone, in the volcanic rocks, is believed to be caused by surface waters, rather than hydrothermal activity.

A total of 176 rock samples were collected, 64 of these from the alteration/gossan zones. All were analyzed for Cu, Pb, Ag, Au and Sb. Alunite was detected by field tests (of dubious reliability) in one zone. The three zones in quartz feldspar porphyry were anomalous in base metals and Ag, or in Sb, but not in Au. The bleached rhyolites were anomalous in Au, but this appears to be related to dykes and flows of Skukum Group volcanic rocks, rather than hydrothermal alteration.

******

DUNK
Du Pont of Canada
Exploration Limited

Geochemical Target
105 D 2 (109)
(60°02'N,134°50'W)

Reference: D.I.A.N.D. (1982, p.113,116).

Claims: DUNK 1-20

Source: Summary by P. Watson from assessment report 091045 by H. Copland and J.T. Neelands.

History:

The claims were staked to cover anomalous Au values in stream sediments located during a regional sampling program.

Description:

The claims are located on the east side of Bennett Lake, 15 km southwest of Carcross. The White Pass and Yukon Route rail line passes along the western edge of the property. The eastern portion of the claim block is underlain by Lower Jurassic Laberge Group siltstone, shale and sandstone. The western portion is underlain by dacite, andesite and basalt of the Upper Triassic Lewes River Group.

Current Work and Results:

The original anomalous stream sediment sample contained 700 ppb Au in the coarse heavy mineral fraction. A follow-up program of 59 soil, 3 rock and 2 stream sediment samples, confirmed the anomaly in the stream sediments. Soil samples taken on either side of the creek contained isolated anomalous Au values up to 45 ppb Au.

No significant mineralization was discovered, although dacite exposures were gossanous in isolated pods.

******

ODD
Du Pont of Canada
Exploration Limited

Geochemical Target
105 D 3 (112)
(60°12'N,135°60'W)

Reference: D.I.A.N.D. (1982, p. 114,117).

Claims: EVEN 1-16: ODD 1-20

Source: Summary by P. Watson from assessment report 091047 by H.J. Copland and J.T. Neelands.

History:

The claims were staked in 1981 to cover anomalous Au values in stream sediment samples collected during a regional sampling program.

Description:

The property is located 16 km west of Carcross. It is underlain by volcanic rocks of the Upper Triassic Lewes River Group. These include feldspar porphyry dacites, basalts and volcanic breccia / conglomerate.

Current Work and Results:

The anomalous stream sediment sample contained 60 ppb Au in the fine heavy mineral fraction. An additional 9 stream sediment, 4 rock and 169 soil samples were collected. All samples in one stream running west contained anomalous Au, with up to 1,100 ppb Au reported in the coarse heavy mineral fraction.

A Cu-Zn soil anomaly merges into a Pb-Zn soil anomaly,to the east. The highest Au values in soils occurred at the head of a creek just west of the original anomalous creek. Elsewhere, Au values were background levels or lower.

One rock sample of volcanic breccia contained 100 ppb Au. Minor disseminated pyrite was found in dacite and a few barren quartz veins 1-4 cm wide were noted in the breccia. One southeast striking quartz vein 5 m by 2 m contained minor chalcopyrite and a chip sample assayed 0.045% Cu and 0.62 g Ag/t.

******

NAIAD	Geochemical Target
Archer, Cathro and	105 D 3 (114)
Associates (1981) Limited	(60°01'N,135°27'W)

Reference: D.I.A.N.D. (1982, p.114,117).

Claims: NAIAD 1-16

Source: Summary by P. Watson from assessment report 091434 by W.D. Eaton.

History:

The claims were staked in 1981 to cover anomalous Ag and Pb soil geochemical values and associated minor mineralized vein float.

Description:

The property is underlain by equigranular granodiorite to quartz monzonite of the Coast Plutonic Complex and is just northwest of the margin of the Bennett Lake Caldera. The intrusive rock is cut by andesite, rhyolite and aplite dykes and contains xenoliths of metavolcanic rocks.

Current Work and Results:

A total of 37 soil samples and 25 reconnaissance rock chip or representative rock samples were collected and analyzed for Ag and Pb. Soil samples contained 0.8 to 2.6 ppm Ag and usually greater than 200 ppm Pb. Except for visibly mineralized samples, Ag and Pb values in rock samples were less than in soil samples. Samples of copper-stained quartz veins containing traces of galena assayed 50.0 ppm Ag and greater than 10,000 ppm Pb.

******

KUKU	Gold Veins
Agip Canada Limited	105 D 3 (23,115)
	(60°12'N,135°25'W)

Reference: D.I.A.N.D. (1982, p.113,116,117).

Claims: KUKU 1-331; CHIEF 1-106; WOOF 1-40

Source: Summary by P. Watson from assessment report 091061 by R.A. Doherty and assessment report 091391 by R.A. Doherty and R. Tykajlo.

History:

The KUKU and CHIEF and WOOF claim blocks were staked in 1981 and 1982 to cover gossan zones found during reconnaissance work.

The CHIEF claims, on Chieftain Hill, to the southeast of the KUKU block, cover an area examined in 1893 and 1967. The old MORNING and EVENING claims (#23) covered a quartz stibnite vein found in 1893. The vein is up to 30 cm wide but was not traced for any length. In 1967-68, Yukon Antimony Corporation conducted an exploration program for porphyry copper in this area (SKUKUM, #22). No previous work has taken place in the main cirque area of the KUKU claims.

Description:

This claim block covers 99.22 km^2 and is located 65 km southwest of Whitehorse. It covers a 10 km wide remnant of Tertiary, Skukum Group, intermediate to felsic volcanic rocks. These volcanic rocks unconformably overly a basement of metamorphosed Late Precambrian Yukon Metamorphic Complex schist and marble which have been intruded by granite to monzonite rocks of the Coast Plutonic Complex. Small Tertiary quartz feldspar porphyry intrusions and late dykes are also intrusive to the volcanic rocks.

Current Work and Results:

In 1981 and 1982, a program of geological mapping, trenching and geochemical sampling was carried out. Magnetometer surveys were also conducted in selected areas and 29 diamond drill holes to a total of 3,325.58 m were completed on KUKU claims.

******

DAYIR	Copper, Iron Skarn
Du Pont of Canada	105 D 6 (116)
Exploration Limited	(60°29'N,135°25'W)

Reference: D.I.A.N.D. (1982, p.114,117).

Claims: DAYIR 1-18

Source: Summary by P. Watson from assessment report 091048 by L. Holmgren and J.A. Korenic.

History:

The claims were staked to cover anomalous Cu and Zn values in stream sediments.

Description:

The property is located 11 km west of Fish Lake. The claims cover the contact between Cretaceous quartz monzonite to granodiorite and andesite. A sequence of arkose, greywacke, black argillite and conglomerate which probably belongs to the Upper Triassic Lewes River Group, occurs to the north.

Current Work and Results:

During the follow up program, 48 soil, 17 rock and 21 stream sediment samples were collected. These confirmed the initial results and outlined areas of high Cu and Zn values over the contact zone.

The contact between the intrusive and volcanic rocks is a 20-30 m wide skarn zone that contains trace chalcopyrite, with malachite and azurite staining, and a 1.5 m wide band of massive magnetite with trace malachite. In addition, several gossanous zones contain 1-2% pyrite within intensely silicified sedimentary rocks. Anomalous Cu and Zn soil values also occur over these pyrite zones.

******

EVIEW	Geochemical Target
Du Pont of Canada	105 D 6 (117)
Exploration Limited	(60°27'N,135°03'W)

Reference: D.I.A.N.D. (1982, p.114,117).

Claims: EVIEW 1-16

Source: Summary by P. Watson from assessment report 091044 by H.J. Copland and J.T. Neelands and assessment report 091431 by H.J. Copland.

History:

The claims were staked in 1981 to cover anomalous Pb-Zn values in stream sediments located during a regional sampling program.

Description:

The claims are located one km east of Lakeview Mountain and 30 km south of Whitehorse. They are underlain by mafic to felsic volcanic and sedimentary rocks that have been intruded by Cretaceous granodiorite. The sedimentary rocks are part of the Lower Jurassic Laberge Group and include siltstone, limestone and quartzite. Rhyolite, dacite, basalt and tuff of the Cretaceous Hutshi Group are also found.

Current Work and Results:

The initial 1981 anomalous stream sediment sample, containing 206 ppm Pb and 1,200 ppm Zn in the fine fraction, was confirmed during 1981 follow up work, when 95 soil, 9 rock and 10 stream sediment samples were collected. A soil anomaly at the head of the creek was also outlined, with values up to 20,000 ppm Pb, 3,570 ppm Zn and 12 ppm Ag reported.

In 1982, 200 soil samples and 7 rock samples were collected in conjunction with additional geological mapping. A Pb-Zn-Ag soil anomaly related to the contact between siltstone and rhyolite was 100 m to 300 m wide and greaater than 1,100 m long.

This contact consists of a 1-3 m wide zone of gossanous and silicified rock that may represent a shear zone. Pyrite is pervasive throughout the volcanic rocks (1-10%) and is found in the siltstone in amounts from trace to 20% as the contact is approached. Sugary, vuggy boxwork quartz containing 5% disseminated pyrite, visible galena and 10-15% cubic boxwork is found in the gossan zone. Two rock samples from this zone contained anomalous values up to 6,600 ppm Pb, 990 ppm Zn and 176 ppm Ag.

******

UTSHIG	Geochemical Target
Du Pont of Canada	105 D 16 (128)
Exploration Limited	(60°54'N,134°29'W)

Reference: D.I.A.N.D. (1982, p.114,118).

Claims: UTSHIG 1-48

Source: Summary by P. Watson from assessment report 091043 by L.D. Holmgren and J.T. Neelands.

History:

The claims were staked in 1981 to cover a creek containing anomalous Au values in heavy mineral fractions, located during a regional sampling program.

Description:

The claim group covers a creek draining into McClintock Lakes, 37 km northeast of Whitehorse and 5 km west of Mount Byng. The property is underlain by fine grained massive basalt of the Cretaceous Hutshi Group, which has been cut by fine grained felsic dykes up to 1.5 m wide. Minor conglomerate was also noted.

Current Work and Results:

Three rock and 19 stream sediment samples were collected on the claims. The original anomalous sample contained 320 ppb Au in the coarse heavy mineral fraction. Follow-up failed to reproduce this value, and samples collected between 700 m upstream and 200 m downstream did not contain values greater than 10 ppb Au in the coarse heavy mineral fraction. Further upstream, however, 2 samples contained 950 ppb Au and 1,500 ppb Au and up to 3.0 ppm Ag in the fine heavy mineral fraction.

Gossans found in the basalt contain 5-7% pyrite cubes and pyrrhotite blebs. Other mineralization reported included samples of vuggy quartz and calcite with siderite and goethite that were found in talus. Assays revealed no anomalous gold values in these rocks.

******

GLENLIVET	Geochemical Target
AGIP Canada Limited	105 D 3 (129)
	(60°03'N,137°17'W)

Claims: GLENLIVET 1-46

Current Work and Results:

Preliminary prospecting was carried out on these claims after they were staked in August, 1982 on a geochemical target.

******

OLLIE	Geochemical Target
Du Pont of Canada	105 D 6 (135)
Exploration Limited	(60°18'N,135°04'W)

Reference: D.I.A.N.D. (1982, p.117).

Claims: OLLIE 1-25

Source: Summary by P. Watson from assessment report 091046 by D.M. Strain and J.T. Neelands.

History:

The claims were staked in 1981 to cover anomalous Ag-Pb-Zn values in stream sediments. Argentiferous quartz veins exist to the north and west of these claims on DONKEY (#76) and UNION (#37).

Description:

The property is located 24 km northwest of Carcross and 3 km southeast of Annie Lake. Lower Jurassic Laberge Group quartzite, conglomerate, greywacke and hornfels have been cut by porphyritic dykes. A fault-bounded wedge of basalt and volcaniclastic rock is found in the centre of the claims. Granitic intrusions south and west of the claims have hornfelsed some of the sedimentary rocks.

Current Work and Results:

The original anomalous stream sediment sample contained 5.3 ppm Ag in the coarse heavy mineral fraction. Nine additional stream sediment, 4 rock and 169 soil samples were later collected and soils on both sides of one tributary of the anomalous creek contained up to 4.7 ppm Ag and 2,500 ppm Zn. Two Pb-Zn-Ag soil anomalies were defined on the property, one in the north and one in the southeast.

Minor quartz veins that appeared to be barren cut the greywacke and minor disseminated pyrite occurs in the sedimentary rocks, especially the greywacke.

******

1982 MINERAL CLAIMS STAKED

JUBILEE	105 D 1 (1)
J. Cukor	(60°13'N,134°07'W)

Claims 1982: J 1-8; M 1-4

KUKU	105 D 3 (115)
AGIP Canada Ltd.	(60°11' - 60°13'N, 135°22'- 135°28'W)

Claims 1982: WOOF 1-40; CHIEF 72-106

GLENLIVET	105 D 3 (129)
AGIP Canada Ltd.	(60°03'N,135°18'W)

Claims 1982: GLENLIVET 1-46

ROSE	105 D 5 (17)
Cominco Ltd.	(60°21'N,135°51'W)

Claims 1982: PRIMROSE 1-8

RAVEN	105 D 7 (130)
G. Horae, D.L. Ryder	(60°25'N,134°52'W)

Claims 1982: RAVEN 1-16

MINK	105 D 12 (131)
E. Kreft	(60°34'N,135°38'W)

Claims 1982: MINK 1-2

LAKE	105 D 14 (132)
F. Chretian, D. Eastmure	(60°54'N,135°16'W)

Claims 1982: LAKE 1-16

POOLY	105 D 14 (133)
G. Peel, N. Dool	(60°54'N,135°10'W)

Claims 1982: POOK 1-2; DOOLY 1-2

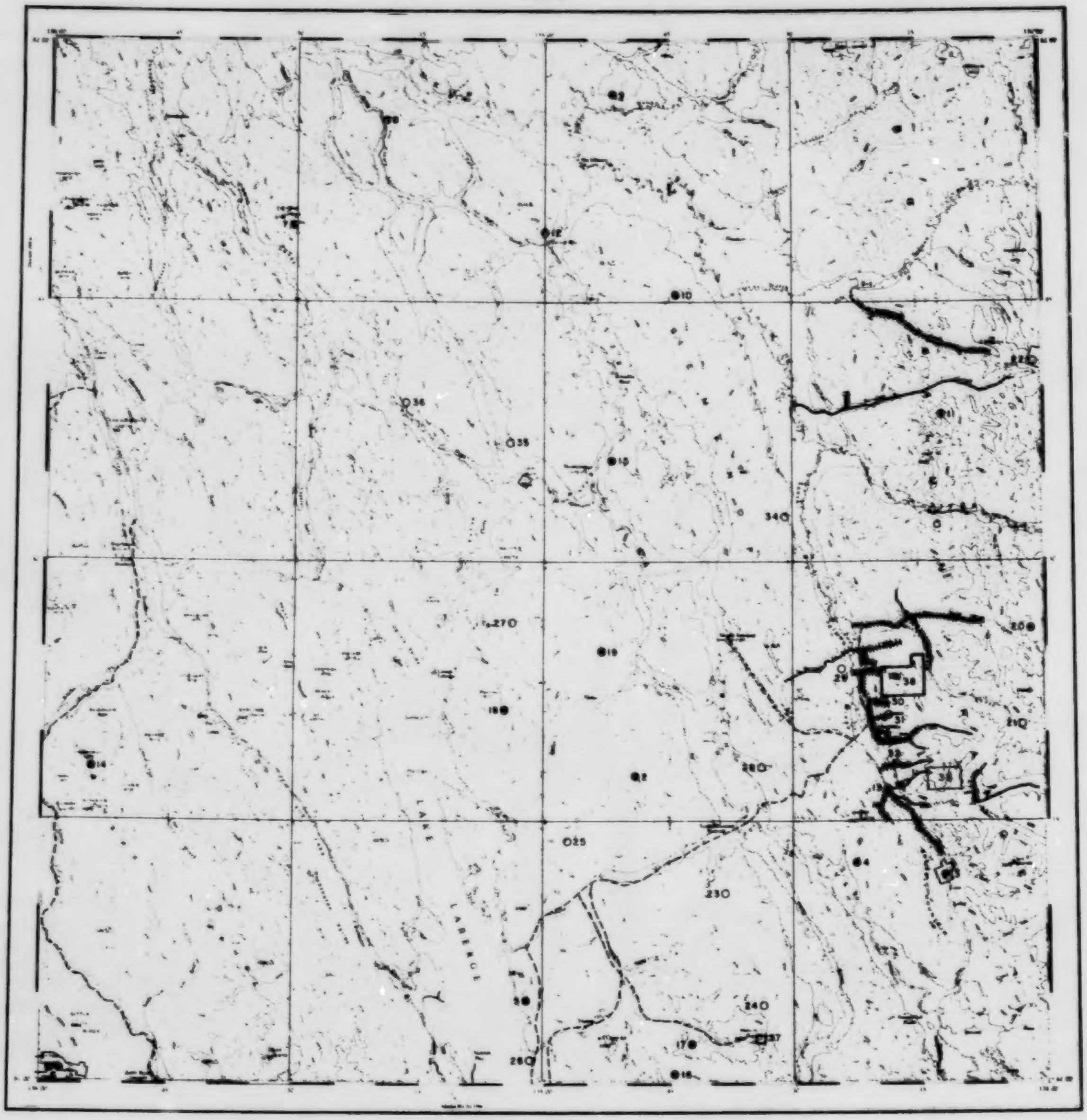
A+B,C+D	105 D 14 (134)
G. Maheux	(60°58'N,135°12'W)

Claims 1982: A,B,C,D

******

NOTES

105 E


10
12
36
35
13
34
27
19
18
14
2
28
25
23
24
17
16
26
20
21
22
11
4
29
30
31
32
33
LAKE
LABERGE

LABERGE

YUKON TERRITORY

Kilometres 5 0 5 10 15 20 25 30 Kilometres

●²¹	Mineral Deposit or Occurrence see Key on facing page
○²⁸	Unmineralized Target
▭	Mineral Claims in good standing (Jan 1983) and staked before Jan 1982
▭	Mineral Claims staked in 1982
——	Placer Leases in good standing (Jan 1983)
——	Placer Claims in good standing (Jan 1983)
CEL	Coal Exploration Licence
CML	Coal Mining Lease
– – –	Tote Trail
——	Driveable Road
✧	Oil or Gas Well
▬	Airstrip

LABERGE MAP-AREA (NTS 105 E)

General Reference: GSC Open File 578 by:
D.J. Tempelman-Kluit, 1978.

NO.	PROPERTY NAME	REFERENCE
1	FLOAT	Gold-Silver-Copper-Lead Vein
2	TUV	Copper-Molybdenum Porphyry
3	LOON	Craig & Laporte (1972, p. 119-120)
4	BEE	Copper Occurrence
5	LABERGE	Findlay (1969a, p. 55-56)
6	TAKHINI	Skarn Copper
7	PACKERS (BAND)	Sinclair et al (1976, p. 112-113)
8	CLAIRE	Bostock & Lees (1938, p. 16)
9	WALSH	Bostock & Lees (1938, p. 16)
10	SEMENOF	Copper-Gold-Silver Vein
11	ILLUSION	D.I.A.N.D., Mines and Minerals Activities (1971, p. 19)
12	CASSIAR BAR	Copper-Silver Occurrence
13	SYLVIA	Lead-Zinc-Gold-Silver-Copper Vein
14	CORDUROY	Coal
15	HOOTALINQUA	Coal
16	HIG	D.I.A.N.D. (1981, p. 170)
17	LORI	Sinclair et al (1976, p. 110)
18	MUSTARD (GEM)	Sinclair et al (1976, p. 111)
19	BACON (BOND)	Sinclair et al (1976, p. 111)
20	HAL	D.I.A.N.D. (1981, p. 170)
21	YETI	D.I.A.N.D. (1981, p. 170)
22	FOG MOUNTAIN	D.I.A.N.D. (1982, p. 121)
23	CROST	D.I.A.N.D. (1982, p. 121)
24	SLINE	D.I.A.N.D. (1982, p. 121)
25	AURIER	D.I.A.N.D. (1982, p. 121)
26	AKEL	D.I.A.N.D. (1982, p. 121)
27	OVOAS	D.I.A.N.D. (1982, p. 121)
28	ENOF	D.I.A.N.D. (1982, p. 122)
29	GERM	D.I.A.N.D. (1982, p. 122)
30	REN	D.I.A.N.D. (1982, p. 122)
31	NC	D.I.A.N.D. (1982, p. 122)
32	MARBEE	D.I.A.N.D. (1982, p. 122)
33	MAYBE	This Report
34	SBS	D.I.A.N.D. (1982, p. 122)
35	HOOT	D.I.A.N.D. (1982, p. 122)
36	RANKL	D.I.A.N.D. (1982, p. 122)
37	TES	This Report
38	OWL	This Report

MAYBE
Du Pont of Canada
Exploration Limited

Geochemical Target
105 E 8 (33)
(60°18'N,134°12'W)

Reference: D.I.A.N.D. (1982, p.121,122)

Claims: MAYBE 1-64

Source: Summary by P. Watson from assessment report 091042 by D.M. Strain and J.T. Neelands.

History:

The claims were staked in 1981 to cover an area of anomalous Au in stream sediments discovered during a regional sampling program.

Description:

The claims are located 77 km northeast of Whitehorse on the northeast side of the South Big Salmon River. They cover the drainage of May Creek. The property lies immediately east of the Teslin Suture and is underlain by Carboniferous and/or Permian schist and gneiss of the Anvil Allochthonous Assemblage.

Current Work and Results:

Six rock, six stream sediment and 54 soil samples were collected in 1981. The original anomalous stream sediment sample of 115 ppb Au was confirmed, but no source for this Au, Cu, Ag anomaly was found. Vuggy, limonitic quartz containing less than 1% galena and pyrite was found as float, but no other mineralization was reported.

******

TES
Canadian Nickel
Company Limited

Unmineralized
Target
105 E 2 (37)
(61°02'N,134°33'W)

Claims: TES 1-4

Current Work and Results:

Mapping at 1:500 scale and rock sampling was done on a portion of the property in 1982. An epithermal vein/stockwork alteration zone, 100 m by 50 m in size, contains quartz veining (chalcedonic quartz), jasperoid veins, silicified breccia zones, carbonate and kaolin. The zone is hosted by a Tertiary porphyritic diorite.

******

1982 MINERAL CLAIMS STAKED

TES
Canadian Nickel Company Limited
105 E 2 (37)
(61°02'N,134°34'W)

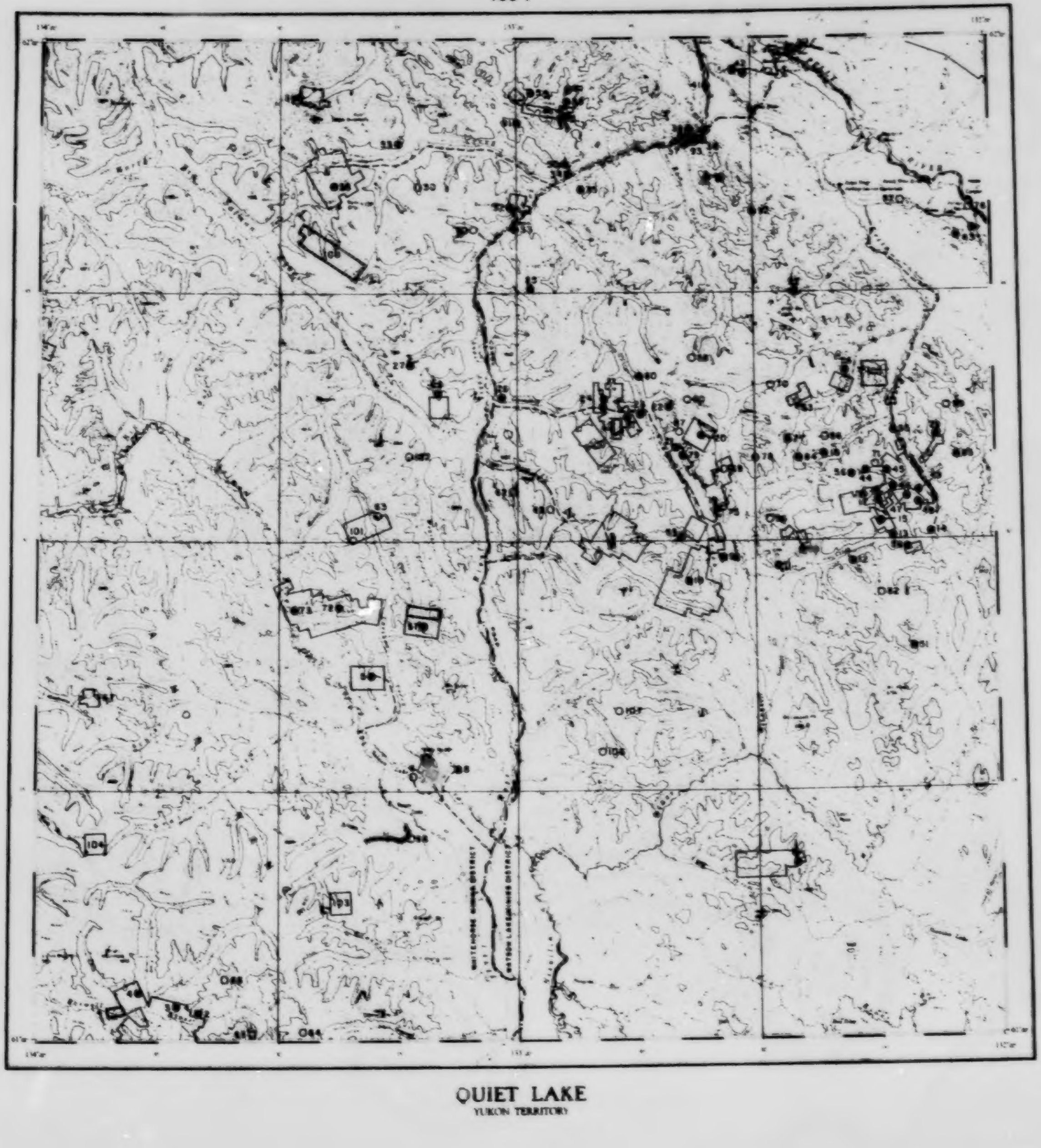
Claims 1982: TES 1-4

OWL
General Resources Ltd;
Savoya Resources Corp.
105 E 8 (38)
(61°23'N,134°17'W)

Claims 1982: OWL 1-69

******

105 F



QUIET LAKE

YUKON TERRITORY

Kilometres 5 0 5 10 15 20 25 30 Kilometres

●	Mineral Deposit or Occurrence with Key on facing page	▬	Placer Leases in good standing (Jan. 1983)	– – –	Tote Trail
○	Unclassified Target	▬	Placer Claims in good standing (Jan. 1983)	―	Driveable Road
▭	Mineral Claims in good standing (Jan. 1983) and staked before Jan. 1982	CEL	Coal Exploration License	✦	Oil or Gas Well
▭	Mineral Claims staked in 1982	CML	Coal Mining Lease	▬	Airstrip

QUIET LAKE MAP-AREA (NTS 105 F)

General Reference: GSC Open File 486 by:
D.J. Tempelman-Kluit, 1977.

NO.	PROPERTY NAME	REFERENCE
1	MOLLY	D.I.A.N.D. (1982, p.126)
2	MOBS	Green (1966, p. 60-62)
3	WOPUS	D.I.A.N.D. (1981, p. 177); D.I.A.N.D. (1982, p. 133)
4	GOPHER	Green (1966, p. 60-62); This Report
5	IOLA	This Report
6	VODKA	Asbestos
7	TOWER PEAK	D.I.A.N.D. (1982, p. 126-127)
8	DODY	Asbestos
9	STORMY (PM)	D.I.A.N.D. (1982, p. 173)
10	MM	Morin et al (1980, p. 60)
11	CPA	Morin et al (1979, p. 80-81)
12	SONNY	Silver-Lead Vein
13	KAY	Findlay (1969a, p. 76-77)
14	SHARON (KET)	Findlay (1969a, p. 76-77)
15	OXO	Green (1965, p. 42-43)
16	KOPINEC	Copper Vein; D.I.A.N.D. (1982, p. 133)
17	BOOM (KON)	D.I.A.N.D. (1982, p. 127)
18	OPERATION	Copper Occurrence
19	BOX (JD)	D.I.A.N.D. (1981, p. 173)
20	GRAYLING	D.I.A.N.D. (1982, p. 127, 133)
21	COXALL (BID)	Morin et al (1979, p. 84)
22	TYRO	Zinc-Silver-Copper-Lead Vein
23	HADYN	Silver-Lead-Copper-Zinc-Gold Vein
24	GROUNDHOG	Findlay (1969b, p. 46-47)
25	ROCKY	Asbestos
26	PONY	Kindle (1945, p. 24)
27	HAM	Skarn Tungsten
28	RISBY	This Report
29	AMBROSE	Copper-Silver Vein
30	TUB (BRIE)	Sinclair et al (1976, p. 112)
31	EVA	D.I.A.N.D. (1981, p. 173)
32	BARITE MOUNTAIN	This Report
33	McNEE	Kindle (1945, p. 24)
34	CANUSA	Lead-Silver-Gold Vein
35	CYR	Wheeler et al (1960)
36	MT. COOK (GREW)	This Report
37	LAPIE	Kindle (1945, p. 25)
38	WATERFALL	Kindle (1945, p. 25)
39	DANGER	Kindle (1945, p. 25)
40	MT. ROSS	Kindle (1945, p. 25)
41	TRENCH	Kindle (1945, p. 21)
42	WHISKEY LAKE	Findlay (1967, p. 89)
43	BRUCE LAKE	Green & Godwin (1964, p. 42-43)
44	MT. MISERY	Silver-Lead-Copper Vein
45	KEY 3	Green (1966, p. 64-68); Findlay (1969b, p. 44-46)
46	LAP 10	Findlay (1969, p. 44-46)
47	HOEY	Findlay (1969, p. 44-46)
48	STUMP	Findlay (1969, p. 44-46)
49	KETZA RIVER	D.I.A.N.D. (1981, p. 174)
50	MAGUNDY	Silver-Lead Vein
51	HOGG	Copper Vein
52	CALGAL (CHUNG)	Morin et al (1980, p. 64)
53	ASKIN	Barite Stratabound
54	DIRK	Barite Stratabound
55	CONNELL	
56	FURY	
57	OBVIOUS	This Report
58	NOKLUIT	D.I.A.N.D. (1981, p. 175)
59	GUANO	D.I.A.N.D. (1981, p. 55-59,175)
60	TAKU	D.I.A.N.D. (1981, p. 175)
61	H (PEAK)	D.I.A.N.D. (1981, p. 175); This Report
62	FIRST	D.I.A.N.D. (1981, p. 176)
63	LAST	D.I.A.N.D. (1981, p. 176)
64	B.R.	D.I.A.N.D. (1982, p. 128-129)
65	MMM (MURPHY)	D.I.A.N.D. (1982, p. 129)
66	TIM	D.I.A.N.D. (1982, p. 129)
67	RPP	D.I.A.N.D. (1982, p. 129)
68	ADDY	D.I.A.N.D. (1981, p. 177)
69	JDX	D.I.A.N.D. (1981, p. 177)
70	McCASH	D.I.A.N.D. (1981, p. 177)
71	TOOTS	D.I.A.N.D. (1981, p. 177)
72	HIDDEN	D.I.A.N.D. (1982, p. 129-130)
73	AYDUCK	D.I.A.N.D. (1982, p. 129-130)
74	CLO	D.I.A.N.D. (1981, p. 176)
75	GULL	Sinclair et al (1976, p. 162)
76	HOOLEO	Sinclair et al (1976, p. 162)
77	CHZERPNOUGH	Morin et al (1979, p. 81)
78	BNOB	Morin et al (1979, p. 83)
79	SUN	Morin et al (1977, p. 195)
80	ANISE	Morin et al (1979, p. 83)
81	WIMP	Morin et al (1979, p. 62)
82	MUMS	Morin et al (1979, p. 80)
83	TREE	Morin et al (1980, p. 61)
84	DROC	Morin et al (1979, p. 81)
85	HOWRU	Morin et al (1980, p. 62)
86	EROS	Morin et al (1979, p. 82)
87	NOT	Morin et al (1979, p. 82)
88	RAM	Morin et al (1980, p. 62)
89	LAP	Morin et al (1980, p. 37)
90	PIM	Morin et al (1980, p. 37)
91	GK	Morin et al (1980, p. 38)
92	ANGIE	Morin et al (1980, p. 38)
93	BOB	Morin et al (1980, p. 39)
94	GRAY	Morin et al (1980, p. 60)
95	IGLE	Morin et al (1980, p. 61)
96	SEATU	Morin et al (1980, p. 62)
97	TOM	Morin et al (1980, p. 63)
98	FER	D.I.A.N.D. (1982, p. 133)
99	NCC	D.I.A.N.D. (1982, p. 133)
100	LORNE	D.I.A.N.D. (1982, p. 130,133)
101	MOX	D.I.A.N.D. (1982, p. 130-131,133)
102	SNERD	D.I.A.N.D. (1982, p. 133)
103	PISA	D.I.A.N.D. (1982, p. 131)
104	SAL	D.I.A.N.D. (1982, p. 131-132)
105	TIER	D.I.A.N.D. (1982, p. 132)
106	OXY	D.I.A.N.D. (1982, p. 132)
107	BIG OX	D.I.A.N.D. (1982, p. 132-133)
108	BIG SAM	This Report

IOLA
AGIP Canada Limited

Copper, Lead, Zinc
105 F 6 (5)
(61° 22'N,133° 20'W)

References: D.I.A.N.D. (1982, p.125,126,133).

Claims: BARB (48)

Source: Summary by P. Watson from assessment report 091078 by P.D. Van Angeren.

History:

The area was explored in 1964 to 1972 by Iola Mines Ltd. Between 1965 and 1969, bulldozer trenching and 7 diamond drill holes totalling 374.6 m were completed. Minor pyrite with traces of galena and chalcopyrite was found in several holes. The BARB claims were staked in two packages in 1981.

Description:

The region is underlain by autochthonous mid-Paleozoic sedimentary rocks and Upper Paleozoic rocks of the Anvil-Campbell allochthon that have been thrust over them.

Current Work and Results:

Mapping and soil sampling programs were conducted in 1982.

******

RISBY
Hudson Bay Exploration and Development Company Limited

Tungsten Skarn
105 F 14 (28)
(61°52'N,133°22'W)

Reference: D.I.A.N.D. (1982, p.125,128).

Claims: CAB (128)

Current Work and Results:

Four claims were geologically mapped at 1:2,500 scale in 1982.

******

BARITE MOUNTAIN
C.W. Friday Contracting

Barite
105 F 14,15 (32)
(61°51'N,133°00'W)

Reference: D.I.A.N.D. (1982, p.125,133).

Claims: CHAR 1-18; BA 1-2

Source: Summary by P. Watson from assessment report 091003 by A.M. McCann.

Current Work and Results:

Barite occurs in a series of near parallel, northeast striking veins within a lower Paleozoic carbonate sequence on the northeast flank of Barite Mountain, 35 km southwest of Ross River. An examination of the property in 1981 located barite exposures in a second gully 300 m south of the previously documented showings. Five showings from 0.6 m to 3.5 m in width were located in the second gully.

******

MT. COOK
Amax of Canada Limited

Zinc, Molybdenum
105 F 15 (36)
(61° 56'N,132° 55'W)

Reference: D.I.A.N.D. (1982, p.125,128).

Claims: GREW (29)

Current Work and Results:

The property was mapped at 1:5,000 scale in 1982 and a grid soil geochemical program was completed.

******

BIG SAM
Hudson Bay Exploration and Development Company Limited

Tungsten Skarn
105 F 14 (108)
(61°48'N,133°25'W)

Claims: BIG 1-68; SAM 1-16

Current Work and Results:

The property was mapped at 1:25,000 scale in 1982. Two claims were mapped at 1:2,000 scale and covered by EM-16 and magnetometer surveys. Scheelite occurs in massive pyrrhotite and garnet diopside skarn bands adjacent to a quartz monzonite body. Minor hand trenching was done on the showings.

******

1982 MINERAL CLAIMS STAKED

GOPHER
Skagway Moly Inc.

105 F 4 (4)
(61°03'N,133°49'W)

Claims 1982: MOLY 17-24

OBVIOUS 105 F 6 (57)
Archer, Cathro and (61° 24'N,133° 15'W)
Associates (1981) Limited

Claims 1982: OBVIOUS 33-48

H (PEAK) 105 F 10 (61)
P. Bland (61° 37'N,132° 48'W)

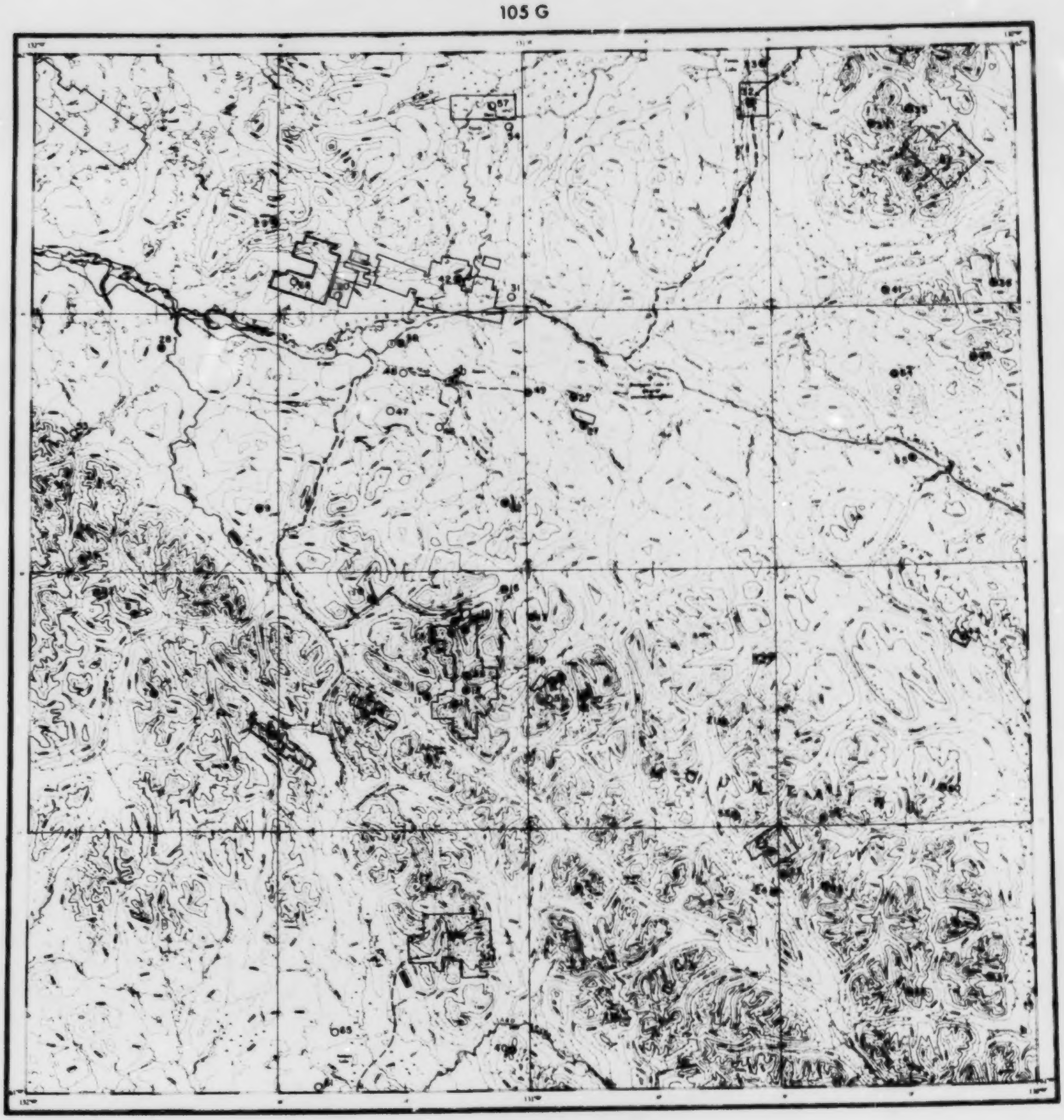
Claims 1982: WHISTLER 1-8

BIG SAM 105 F 14 (108)
Hudson Bay Exploration and (61° 47'N,133° 25'W)
Development Company Limited

Claims 1982: BIG 1-68; SAM 1-16

******

105 G


132°
131°
130°
67
34
31
48
47
40
27
65
63

FINLAYSON LAKE

YUKON TERRITORY

Kilometres
5
0
5
10
15
20
25
30
Kilometres

●⁷² .... Mineral Deposit or Occurrence see key on facing page

○⁷² .... Unclassified Target

▭ .... Mineral Claims in good standing (Jan. 1983) and staked before Jan. 1982

▭ .... Mineral Claims staked in 1982

—— .... Placer Leases in good standing (Jan. 1983)

▬ .... Placer Claims in good standing (Jan. 1983)

CEL .... Coal Exploration Licence

CML Coal Mining Lease

– – – .... Tote Trail

—— .... Driveable Road

✧ .... Oil or Gas Well

▬ .... Airstrip

FINLAYSON LAKE MAP-AREA (NTS 105 G)

General Reference: GSC Open File 486 by:
D.J. Tempelman-Kluit, 1977.

NO.	PROPERTY NAME	REFERENCE
1	MONT	Findlay (1967, p. 64-65); D.I.A.N.D. (1982, p. 136)
2	BLUEBERRY	Silver-Lead-Zinc-Copper-Tungsten Vein
3	SLAM	Zinc-Copper Vein
4	TINTINA (EAGLE)	Morin et al (1977, p. 199-203)
5	PLUMB (NOLE)	Morin et al (1979, p. 86)
6	FH (JOE)	Morin et al (1980, p. 64-65); This Report
7	McNEIL	Copper
8	AXE	Craig & Laporte (1972, p. 131)
9	HOO	Sinclair & Gilbert (1975, p. 85-86)
10	EL	Findlay (1969a, p. 79)
11	PICK	Silver-Lead Vein
12	GRASS	Molybdenum-Tungsten Vein
13	SANDERS	Skarn Lead-Zinc-Copper
14	RILEY	Copper-Lead Vein
15	ZIELINSKI	Lead-Zinc-Copper-Silver Vein
16	RIVIERA	Copper-Zinc Stratabound
17	GYP	Lead-Zinc-Copper Vein
18	GEE	Lead Vein
19	PIT	Zinc-Copper-Silver-Gold Vein
20	ROG	Copper-Lead-Silver Vein
21	PACK	D.I.A.N.D. (1981, p. 180)
22	FYRE	D.I.A.N.D. (1982, p. 135)
23	TOP	Silver-Lead-Zinc Vein
24	DUB	Findlay (1967, p. 59-60)
25	MM	Skarn Copper
26	VINCENT	Copper Vein
27	BOT	Morin et al (1979, p. 85)
28	PUP	Asbestos
29	CHOW	Morin et al (1979, p. 88)
30	DOL	
31	CAMPBELL	Keele (1910, p. 50)
32	PHIL (BOB)	D.I.A.N.D. (1981, p. 180,182)
33	PAY	Findlay (1969a, p. 81-83)
34	RIS	Copper Vein
35	SPUD	Tempelman-Kluit (1974, p. 44)
36	JAKE	Silver-Lead-Zinc Vein
37	MAP	Silver-Lead Vein
38	WATERS	Silver-Lead Vein
39	ZIMMER	Copper
40	INGS	Copper Vein
41	HARMAN	Sinclair & Gilbert (1975, p. 88)
42	ELECTRIC	This Report
43	MYDA	D.I.A.N.D. (1981, p. 180)
44	FETISH	This Report
45	QUANDARY	
46	FREGERG	
47	FLIN	
48	FLON	
49	HUDSON	
50	AIRBORNE	
51	TOKE	D.I.A.N.D. (1981, p. 180)
52	FOG	D.I.A.N.D. (1981, p. 181)

53	STARR	D.I.A.N.D. (1981, p. 182)
54	GONZO	D.I.A.N.D. (1981, p. 182)
55	BOOT	D.I.A.N.D. (1981, p. 181)
56	HOWDEE	D.I.A.N.D. (1981, p. 182)
57	DWONK	D.I.A.N.D. (1981, p. 182)
58	EAGLE (FRED)	D.I.A.N.D. (1981, p. 182)
59	PY	Sinclair *et al* (1976, p. 164)
60	MONEY	Sinclair *et al* (1976, p. 166)
61	BOW	Morin *et al* (1979, p. 85)
62	NMT	Morin *et al* (1977, p. 203)
63	TIL	Morin *et al* (1980, p. 65)
64	IRENE	Morin *et al* (1980, p. 67)
65	PAT	Morin *et al* (1979, p. 85)
66	NEW	Morin *et al* (1979, p. 87)
67	SAS	D.I.A.N.D. (1982, p. 136)
68	LEACH	This Report
69	CYR	Morin *et al* (1980, p. 64)

ELECTRIC

Hudson Bay Exploration and Development Company Limited
Lead,Zinc
105 G 14 (42)
(61° 46'N,131° 12'W)

References: D.I.A.N.D. (1982, p.135,136); Morin *et al* (1980, p.66-67); Morin *et al* (1979, p.88).

Claims: EAGLE (55); BINGO (16); SHALE (83); FRED (4); RENO (66); BIG (38)

Source: Summary by P. Watson from assessment reports 091017 and 091025 by R. Stroshein.

Current Work and Results:

In 1982, seven diamond drill holes totalling 705.7 m were drilled on the EAGLE, SHALE and RENO claims to test EM conductors and to test for extensions of mineralized zones. The surface showing on the EAGLE claims consists of lenses of banded sphalerite and galena in quartz chlorite hornblende phyllite, near the contact with graphite phyllite. Two narrow (1-2 mm) bands of galena-sphalerite were intersected at approximately 30 m depth in one hole in this area. No significant mineralization was found in the other holes.

******

FETISH

Esso Resources Canada Limited; Archer, Cathro and Associates (1981) Limited
Copper, Lead, Zinc
105 G 8 (44)
(61°25'N,130°07'W)

References: Sinclair *et al* (1975, p.155); Sinclair and Gilbert (1975, p.86).

Claims: KINK 1-8

History:

The area was examined in 1973 and 1974 by Finlayson Joint Venture (Archer, Cathro and Associates Limited). Geological mapping, soil and stream sediment sampling and diamond drilling were undertaken at that time. Two holes totalling 214.9 m were drilled in 1974. Copper and zinc mineralization occurs in chloritic schist overlain by sedimentary rocks and banded iron formation.

Current Work and Results:

Ground EM and magnetometer surveys were conducted on the property. EM and magnetic responses were obtained from graphitic sedimentary rock and banded iron formation, respectively.

******

LEACH

Hudson Bay Exploration and Development Company Limited
Geophysical Target
105 G 14 (68)
(61° 48'N,131° 25'W)

Reference: Morin *et al* (1980, p.67).

Claims: RAB 1-136

Source: Summary by P. Watson from assessment report 091426 by R. Stroshein.

History:

The RAB claims, 80 km east-southeast of Ross River, were staked in 1982 to cover the western end of a geologically favourable belt, following a regional airborne EM and magnetometer survey.

Description:

Three northwest trending, gently undulating formations have been mapped. The oldest rocks are quartz chlorite phyllite of the Mount Mye Formation, which is probably Cambrian to Ordovician in age. The upper contact is gradational into the lower graphitic unit of the Vangorda Formation. This consists of carbonaceous to graphitic phyllite to shale, and is referred to as the Transition Horizon. The contact zone rocks contain galena-sphalerite mineralization to the east on the EAGLE and SHALE claims (ELECTRIC, #42). Because of its distinctive electromagnetic signature (due to graphite), this contact unit has been traced for 13 km. The upper part of the Vangorda Formation is calcareous quartz chlorite phyllite with minor graphitic shale and metamorphosed volcanic rocks. The third formation in the area is the Menzies Creek Formation. These Ordovician to Devonian, carbonaceous to graphitic shales and phyllites outcrop on the northern portion of the property.

Current Work and Results:

In addition to the geological survey, MAX-MIN EM and magnetometer surveys were carried out in 1982. The electromagnetic survey delineated two main zones of shallow, north dipping, multi-banded conductors, while several spot magnetic highs were located near the southern conductive zone.

******

1982 MINERAL CLAIMS STAKED

FH	105 G 5, 6	(6)
Amax of Canada Limited	(61°20'N,131°30'W)	

Claims 1982: ZAP 1-6; ZOO 1-28

FETISH	105 G 8	(44)
Archer Cathro and Associates (1981) Limited	(60°25'N,130°08'W)	

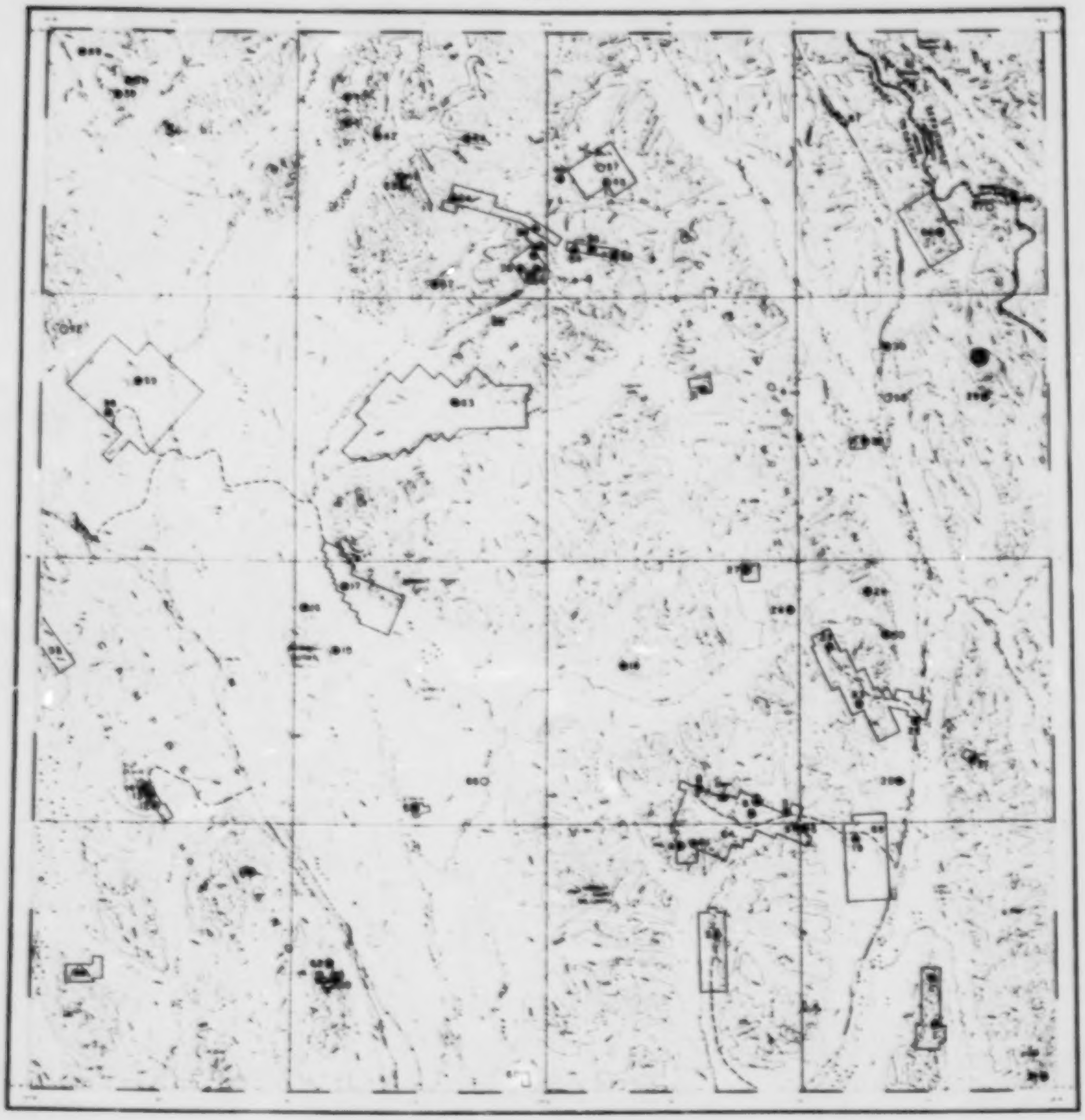
Claims 1982: KINK 1-8

LEACH	105 G 14	(68)
Hudson Bay Exploration and Development Company Limited	(61°48'N,131°25'W)	

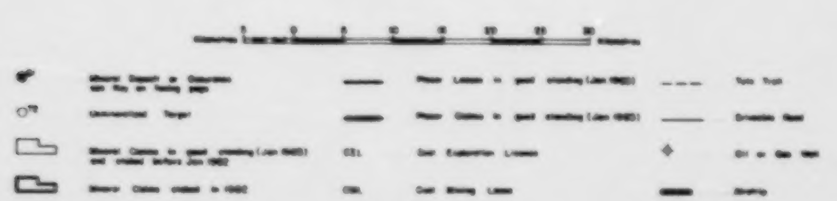
Claims 1982: RAB 1-136

******

105 H



FRANCES LAKE
YUKON TERR – NORTHWEST TERR



FRANCES LAKE MAP-AREA (NTS 105 H)

General Reference: GSC Map 6-1966 by: S.L. Blusson, 1966.

NO.	PROPERTY NAME	REFERENCE
1	JAN	This Report
2	MIDAS	D.I.A.N.D. (1982, p. 139-140,145)
3	FLIP (MTB)	D.I.A.N.D. (1981, p. 185)
4	DC	Green (1966, p. 72)
5	MIKO	D.I.A.N.D. (1982, p. 140)
6	GLENNA	D.I.A.N.D. (1982, p. 141)
7	STEELE	Sinclair & Gilbert (1975, p. 81-82)
8	MAX	Sinclair & Gilbert (1975, p. 81-82)
9	FRANCES	Copper Vein
10	LIND	Asbestos; This Report
11	DOUG	Copper Vein
12	TUCHITUA	D.I.A.N.D. (1981, p. 185)
13	EKO (GREEN STUFF)	Morin et al (1977, p. 209)
14	DIM	Asbestos
15	MAY	Green (1966, p. 72)
16	MAPEL	Copper-Lead-Zinc Vein
17	MATT BERRY	D.I.A.N.D. (1982, p. 141)
18	FLUKE	D.I.A.N.D. (1981, p. 186)
19	CANYON	This Report
20	STU	Blusson (1966)
21	TERRY	Skarn Tungsten; D.I.A.N.D. (1982, p. 145)
22	CORRIE	Copper Occurrence
23	BLACK JACK	D.I.A.N.D. (1982, p. 141-142)
24	FIR TREE	D.I.A.N.D. (1982, p. 141-142)
25	MONTSE	Skarn Tungsten
26	RON	Green (1966, p. 68-71); D.I.A.N.D. (1982, p. 145)
27	HELEN	Blusson (1966); D.I.A.N.D. (1982, p. 145)
28	BROD	D.I.A.N.D. (1981, p. 186)
29	RAIN	D.I.A.N.D. (1981, p. 188); D.I.A.N.D. (1982, p. 145)
30	ROAD	Green (1968, Figure 1); D.I.A.N.D. (1981, p. 188)
31	TOY (REA)	Morin et al (1977, p. 210)
32	BR	Skarn Tungsten-Copper
33	TANYA	Craig & Milner (1975, p. 117)
34	GUY	Green (1968, Figure 1)
35	THOR	D.I.A.N.D. (1982, p. 142)
36	BROTEN	Skarn Tungsten-Copper-Molybdenum
37	TUSTLES	Copper Occurrence
38	TED	D.I.A.N.D. (1982, p. 142)
39	NARCHILLA	Skarn Tungsten-Copper-Lead-Zinc
40	LEE	D.I.A.N.D. (1981, p. 188)
41	YUSEZYU	Blusson (1966)
42	DODGE	Skarn Molybdenum
43	TILLEI	Molybdenum-Tungsten Porphyry
44	HITCH HIKER	Silver-Lead-Zinc Vein
45	ZEUS	D.I.A.N.D. (1982, p. 143)
46	CHAP	D.I.A.N.D. (1982, p. 143)
47	ALM	Skarn Lead-Zinc
48	BUS	Skinner (1961, p. 46)
49	TIM	Skarn Lead-Zinc-Copper
50	SUSAN	D.I.A.N.D. (1982, p. 142)
51	LAN	D.I.A.N.D. (1981, p. 187)
52	TIN	D.I.A.N.D. (1981, p. 187)
53	VIKING	D.I.A.N.D. (1981, p. 187)
54	WOAH	D.I.A.N.D. (1981, p. 187)
55	JULIA	D.I.A.N.D. (1982, p. 143)
56	TINY	D.I.A.N.D. (1981, p. 188)
57	AURORA	D.I.A.N.D. (1982, p. 143)
58	TAI	D.I.A.N.D. (1981, p. 187)
59	FIN	This Report
60	HAWK	D.I.A.N.D. (1982, p. 144)
61	SUZANNE	Morin et al (1977, p. 207)
62	KING ARCTIC	Morin et al (1977, p. 208)
63	MAXI	Morin et al (1980, p. 67-68)
64	ON	D.I.A.N.D. (1982, p. 145)
65	KNEIL	This Report
66	TYER	D.I.A.N.D. (1982, p. 145)
67	LYNX	D.I.A.N.D. (1982, p. 145)
68	TUNA	This Report
69	GEL	D.I.A.N.D (1982, p. 144-145)

JAN
Kinai Resources Corporation

Gold, Copper Skarn
105 H 1 (1)
(61°03'N,128°16'W)

References: D.I.A.N.D. (1982, p.139,145); D.I.A.N.D. (1981, p.184,185).

Claims: PATRICIA (18); PRINCESS (12)

Source: Summary by P. Watson from assessment report 091066 by D.W. Tully.

Current Work and Results:

In 1981, magnetometer, VLF-EM and geochemical surveys were conducted on the PATRICIA 5-22 claims, which lie to the south of the PRINCESS claims. The magnetometer survey delineated one broad magnetic low in the southeastern part of the claims and two local magnetic highs. Two apparent VLF-EM conductors were indicated, in the southwest and southeast parts of the claims, respectively.

A total of 131 soil samples were collected and analyzed for Pb, Cu, Zn and Ag. Values greater than 200 ppm Zn or 1.2 ppm Ag were considered anomalous. A coincident Zn-Pb-Cu anomaly was located in the southeastern part of the claims. Two, single value Ag anomalies were also noted.

******

CANYON Silver,Lead,Zinc
Kimberley Gold Resources Skarn
Incorporated 105 H 1 (19)
(61°14'N,128°23'W)

Reference: D.I.A.N.D. (1982, p.139,145).

Claims: SKULL 1-180

Source: Summary by P. Watson from assessment reports 091060 and 091072 by D.W. Tully.

History:

The first SKULL claims were staked in 1977. In 1981, 140 claims were added to this group. The area was originally staked as the SILVER claims in 1965 to cover two Pb-Zn showings. Trenching was carried out in 1965, 1978 and 1979.

Description:

This property is located just west of Km 78 on the Nahanni Range Road, at Conglomerate Creek Road. The area is underlain by black shale, impure sandstone, calcareous sedimentary rocks and graphitic schists. Granitic intrusions occur in the northern part of the claim block.

Two zones containing base and precious metals outcrop on the property. The Upper Skull Zone consists of galena, sphalerite and pyrite mineralization in sheared shale, phyllite, graphitic schist and argillaceous sedimentary rocks with quartz veins accompanied by skarn-type mineralization. In the Lower Skull Zone, a flat-lying lens of disseminated galena, sphalerite, pyrite and pyrrhotite occurs interbedded in a skarn-type zone in quartz phyllite. The surface exposure is 6 m by 0.3 m.

Current Work and Results:

In 1981, 8 BQ diamond drill holes totalling 1,400.3 m were completed, along with geophysical and geochemical surveys.

Two drill holes in the Upper Skull Zone intersected 0.31 m of 987.4 g Ag/t, 0.17 g Au/t, 0.35% Pb, 0.05% Cu and 0.01% Zn, and 0.61 m of 171.8 g Ag/t, 0.14 g Au/t, 4.28% Pb, 0.01% Cu and 0.15% Zn, respectively. The four other holes on the Upper Skull Zone and two holes on the Lower Skull Zone did not intersect significant mineralization.

The magnetometer survey revealed a northerly trending region of magnetic highs on the eastern part of the property. VLF-EM conductor zones somewhat coincide with the magnetic highs, but no significant geochemical anomalies occur in this area.

A total of 5,635 soil samples were collected and analyzed for Pb and Zn. Values greater than 200 ppm Zn or 60 ppm Pb were considered anomalous. Anomalous values are concentrated in the northern half of the property.

******

FIN Lead, Zinc, Barite
Cominco Limited Stratiform
105 H 12 (59)
(61°40'N,129°50'W)

References: D.I.A.N.D. (1982, p.139,144); D.I.A.N.D. (1981, p.188).

Claims: FIN (469)

Source: Summary by P. Watson from assessment report 091407 by T.W. Hodson and J.J. Lajoie.

Current Work and Results:

Work in 1982 included geological mapping, geochemical sampling and a UTEM geophysical survey.

Mapping was conducted at 1:10,000 and 1:20,000 scales. The Devonian-Mississippian Besa River Formation (Lower Earn Group) rocks on the property include chert pebble conglomerate, siltstone-mudstone, mudstone, siltstone-sandstone and siltstone-mudstone-sandstone units. A Devonian dolomite was also mapped. Ordovician-Silurian Road River Formation mudstone-chert, siltstone and chert-siltstone units were found to a lesser extent. The oldest material mapped was Proterozoic arkosic sandstone.

During the geochemical program, 1,398 soil, 12 stream sediment and 74 rock samples were collected and analyzed for Pb, Zn, Mn and Ba.

******

KNEIL Iron, Zinc, Lead
Cyprus Anvil Mining Stratiform
Corporation 105 H 4 (65)
(61°07'N,129°50'W)

Reference: D.I.A.N.D. (1982, p.8,139,145).

Claims: KNEIL (58)

Source: Summary by P. Watson from assessment report 091067 by G.A. Jilson.

History:

The claims were staked in 1981 to cover small showings of stratiform, disseminated to nearly massive sulphides with some base metal content, which were located during reconnaissance mapping.

Description:

The property is located 125 km north-northwest of Watson Lake. Two rock units were mapped on the claims. Along the southern edge of the block, a strongly and pervasively foliated granodiorite pluton of possible Devonian age is exposed. Most of the property is underlain by a metasedimentary and metavolcanic complex, the rocks of which are highly strained and metamorphosed with a strong foliation and well-developed lineation. Two major lithologies were noted, micaceous quartzite to siliceous phyllite and graphitic, siliceous phyllite. Minor amounts of quartz-phenocryst felsic metavolcanic rock, quartz grit and metabasite are interlayered with the other units.

Current Work and Results:

Mineralization is hosted in micaceous quartzite. Semi-massive to disseminated pyrite and pyrrhotite with lesser sphalerite, galena and chalcopyrite forms a layer or pod less than one metre wide and of unknown, but limited lateral extent. Because of the amount of deformation in the host rocks, it is possible the original body may have been structurally segmented.

A 50 m by 200 m soil sampling grid was established on the claims in 1981, and approximately 1,000 samples collected. Samples were considered anomalous if they contained greater than 120 ppm Cu, 100 ppm Pb or 300 ppm Zn. Anomalous Cu values were spread diffusely over the southwestern portion of the property. A weakly anomalous Cu-Pb-Zn zone surrounds the known showing. A weak Cu-Zn anomaly appears to be related to underlying graphitic rocks and a weak Pb anomaly near the granodiorite exposures may be due to the presence of small Ag-Pb veinlets in the intrusive. Regionally, the granodiorite is anomalous in Pb-Ag-Zn because of such veinlets. Au, As, Hg, Ba and Ag values were determined for two sample lines near the showing and a weak Cu-Ag enriched zone was noted.

******

TUNA	Tungsten
Union Carbide	105 H 16 (68)
Exploration Corporation	(61°50'N,128°15'W)

References: D.I.A.N.D. (1982, p. 139,144,145).

Claims: TUNA (144)

Source: Summary by P. Watson from assessment report 091014 by P.J. Doyle, D. Archibald, D. James and J. Toohey.

History:

The claims were staked in 1981 to cover molybdenite-scheelite mineralization following the re-evaluation of data collected in earlier reconnaissance programs. The area was first examined for its potential for skarn development similar to that at nearby Cantung, and later for its W-Mo porphyry potential.

Description:

The property is located approximately 1.6 km east of the Nahanni Range Road. A non-foliated, mid-Cretaceous biotite quartz monzonite body, exposed over a 9 km by 2.5 km area, has intruded late Proterozoic to early Cambrian slate, phyllite, siltstone and quartzite. Some calcareous horizons occur within the phyllite. The pluton is a two-phase quartz monzonite, with an equigranular margin and a megacrystic core. Several pulses are evident within the megacrystic section, with feldspar crystals up to 8 cm in diameter. Two samples of the pluton were K-Ar dated by D. Archibald at Queen's University. Apparent ages of 92.4 ± 1.6 Ma for biotite and 94.3 ± 1.6 Ma for muscovite were determined. The plug is cut by aplitic and porphyritic dykes and by later quartz and quartz-tourmaline veins with associated breccia and stockwork. Lamprophyre dykes cut all older rocks. Pyrite, molybdenite, scheelite, chalcopyrite, chalcocite, arsenopyrite, pyrrhotite and bismuthinite with significant Au and Ag values were reported. Sericitic, potassic and argillic alteration was noted at vein margins and within breccias. Pervasive sericitic alteration occurs in parts of the pluton.

Current Work and Results:

In 1981, a program of geological mapping and rock, soil and stream sediment geochemistry was carried out. Five W-Cu-Mo showings and 13 occurrences of mineralization in talus were discovered. Most of the showings are related to dykes, veins or breccia zones in the intrusion and consist of flakes or fine disseminations of molybdenite and scheelite. A scheelite-pyrrhotite-chalcopyrite- bearing pyroxene skarn showing occurs in a roof pendant of phyllite.

Ten panned concentrates from drainages in the area, 144 stream sediment and soil samples and 44 rock samples were collected. Samples were analyzed for Cu, Mo and W. Selected samples were also analyzed for Ag and Sn.

Eight percent of the W values for soil or stream sediment samples were greater than 35 ppm W and most could be related to known mineralization. Over half of the Mo values were greater than the regional background of 2 ppm Mo. High values could be related to known mineralization. Anomalous Cu values coincided with anomalous Mo and W values and concentrated near the roof pendant and the chalcopyrite-scheelite-pyrrhotite skarn within it. Most rock samples analyzed were grab samples from areas near known mineralization.

******

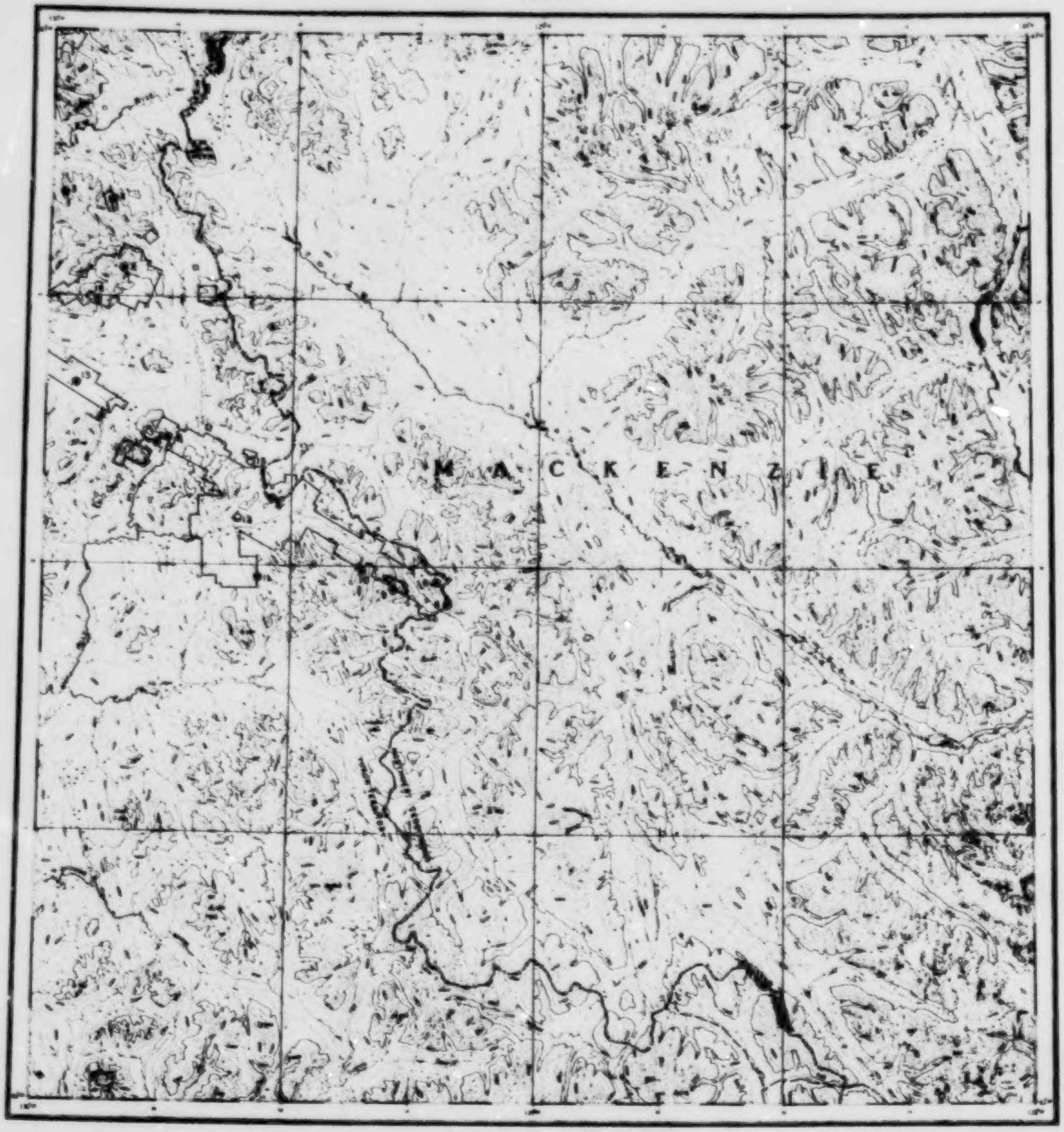
1982 MINERAL CLAIMS STAKED

LIND	105 H 3 (10)
M. Rosequist	(61°06'N,129°26'W)

Claims 1982: KING 3-4; ZIP; ROSE 1-3

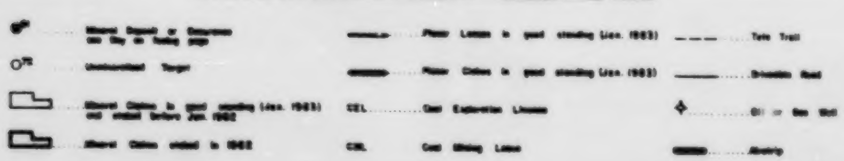
******

105 I



NAHANNI

YUKON TERRITORY - NORTHWEST TERRITORIES


CEL
CML
Tote Trail

NAHANNI MAP-AREA (NTS 105 I)

General Reference: GSC Open File 780 and GSC Open File 809 by: S.P. Gordey, 1981.

NO.	PROPERTY NAME	REFERENCE
1	NAR	Copper-Lead-Silver-Zinc Vein
2	OMO	D.I.A.N.D. (1982, p. 147)
3	BIRR (BEE)	Findlay (1969b, p. 50)
4	NOM (SEL)	Sinclair et al (1975, p. 165-166); D.I.A.N.D. (1981, p. 191)
5	HOWARD'S PASS	MIR (N.W.T.), 1973; D.I.A.N.D. (1981, p. 7,18)
6	SHIELD	Sinclair et al (1975, p. 160-161)
7	ORO	Sinclair & Gilbert (1975, p. 96-98)
8	WISE	Lead-Zinc-Silver-Stratabound
9	WINKIE (ROSS)	Sinclair et al (1975, p. 161-162); This Report
10	NESS (MAD)	Sinclair & Gilbert (1975, p. 96-97)
11	DIANNE	
12	RITZ	D.I.A.N.D. (1981, p. 190)
13	ABBEY	D.I.A.N.D. (1981, p. 190)
14	TANG	Morin et al (1979, p. 92)
15	OHNO	Morin et al (1980, p. 69)
16	ROOK	Morin et al (1980, p. 70)
17	FAST	This Report

1982 MINERAL CLAIMS STAKED

WINKIE 105 I 6 (9)
Placer Development Limited (62°29'N,129°17'W)

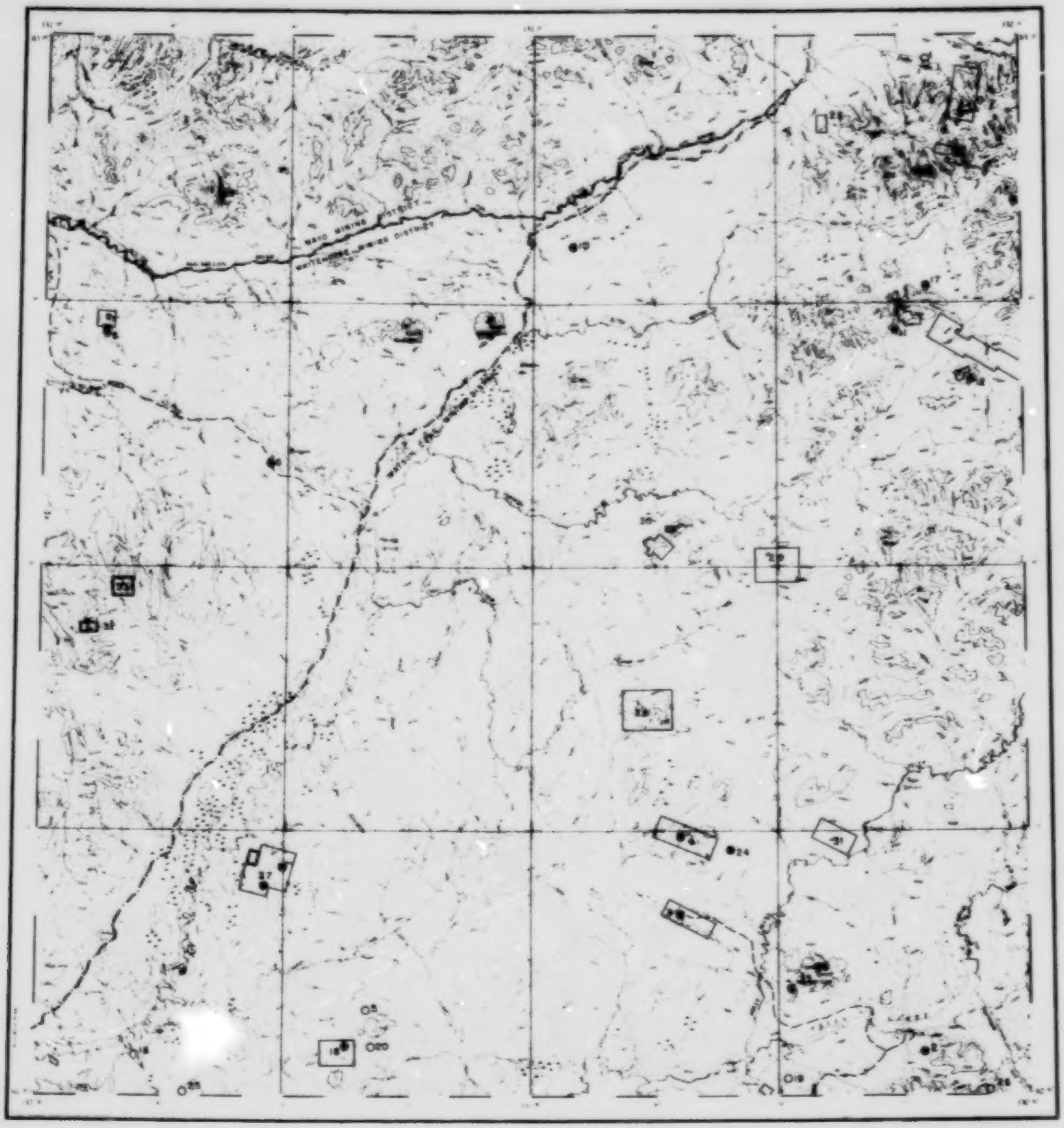
Claims 1982: NOD 1, 3-14

FAST 105 I 12 (17)
Hudson Bay Exploration and Development Company Limited (62°36'N,129°50'W)

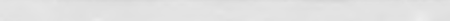
Claims 1982: FAST 1-30

******

105 J


MAYO MINING DISTRICT
WHITEHORSE MINING DISTRICT

SHELDON LAKE
YUKON TERRITORY


Kilometres 5 0 5 10 15 20 25 30 Kilometres

●⁹⁸	Mineral Deposit or Occurrence see Key on facing page	▬	Placer Leases in good standing (Jan. 1983)	– – –	Tote Trail
○⁹⁸	Unconfirmed Target	▬	Placer Claims in good standing (Jan. 1983)	———	Driveable Road
▭	Mineral Claims in good standing (Jan. 1983) and staked before Jan 1982	CEL	Coal Exploration Licence	◇	Oil or Gas Well
▭	Mineral Claims staked in 1982	CML	Coal Mining Lease	▬	Airstrip

SHELDON LAKE MAP-AREA (NTS 105 J)

General Reference: GSC Map 12-1961 by:
J.A. Roddick and L.H. Green, 1961.
GSC Open File 212 by:
D.J. Tempelman-Kluit, 1974.

NO.	PROPERTY NAME	REFERENCE
1	FULLER	
2	BILL	Findlay (1969a, p. 81)
3	PIKE	D.I.A.N.D. (1982, p. 149)
4	NORKEN	Sinclair et al (1976, p. 169)
5	TAC	Copper-Molybdenum Porphyry
6	DRAGON	Skinner (1961, p. 43); D.I.A.N.D. (1981, p. 195)
7	MT. SHELDON	Kindle (1945, p. 25)
8	RIDDELL	Craig & Milner (1975, p. 105-106)
9	SPEARHEAD (PDM)	Craig & Milner (1975, p. 33)
10	ROG	Craig & Milner (1975, p. 123)
11	CLYDE	Craig & Laporte (1972, p. 128)
12	PROVOST	Sinclair & Gilbert (1975, p. 118-119); D.I.A.N.D. (1981, p. 195)
13	GUN	Findlay (1969b, p. 166-167); D.I.A.N.D. (1981, p. 151)
14	ITSI	D.I.A.N.D. (1981, p. 193)
15	COSTIN	Silver-Lead-Zinc Vein
16	CAROLYN	Coal
17	VARISCITE (MS)	Sinclair et al (1975, p. 166-167)
18	HENCH	D.I.A.N.D. (1981, p. 193)
19	PPR	D.I.A.N.D. (1981, p. 195)
20	CLINGON	D.I.A.N.D. (1981, p. 195)
21	WILSON	D.I.A.N.D. (1981, p. 194)
22	EMPTY	D.I.A.N.D. (1981, p. 194)
23	TRAFFIC	D.I.A.N.D. (1981, p. 194)
24	PIG	Morin et al (1979, p. 93)
25	BOJO	Morin et al (1980, p. 71)
26	LH	D.I.A.N.D. (1982, p. 151)
27	AM	This Report
28	SHERPA	D.I.A.N.D. (1982, p. 150,151)
29	DYAK	D.I.A.N.D. (1982, p. 150,151)
30	RUDY	This Report
31	GREGGIE	D.I.A.N.D. (1982, p. 150-151)
32	RAGS	This Report
33	WENDY	This Report

AM
Saskatchewan Mining and
Development Corporation

Copper,Molybdenum
Porphyry
105 J 3,4 (27)
(63°13'N,131°32'W)

Reference: D.I.A.N.D. (1982, p.149,150,151).

Claims: AM (99)

Source: Summary by P. Watson from assessment reports 091013 and 091069 by T. Walker.

History:

The claim block is located 57 km northeast of Ross River. The first claims were staked in July, 1981, following the discovery of disseminated molybdenite and chalcopyrite during a regional stream sediment geochemistry program. Claims were added in August and September, 1981 and in July, 1982.

Description:

These claims are underlain by a series of sedimentary rocks, of probable Devono-Mississippian age, that have been intruded and hornfelsed by quartz hornblende biotite granodiorite to quartz diorite intrusions. Fine grained porphyritic dykes 1-5 m thick have also intruded the sedimentary rocks. The sedimentary rocks can be subdivided into the following three packages. The first package consists of varicoloured siliceous clastic rocks that are finely banded to massive and include phyllitic and slaty argillite, siltstone and quartzite and thin calcareous beds. These are overlain by calcareous siltstone, mudstone, calc-silicate schist and crystalline limestone. Black shale and phyllite with interbedded black chert, sandstone and siltstone make up the third package.

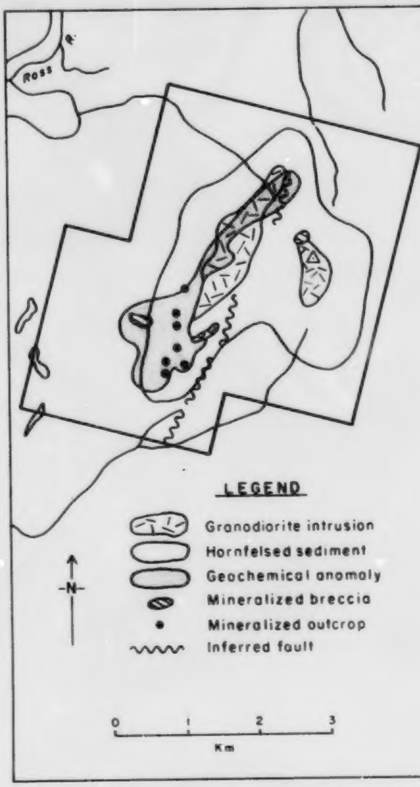
The intrusion is elongate to the north and appears to have been sliced into three blocks by faulting, with downthrow to the west, marked by a decrease in the metamorphic grade of the hornfels from the east to the west. Generally, the metamorphic aureole extends 200-300 m from the intrusive contact. To the southwest, it extends for 1,000 m by 2,000 m and contains mineralized quartz vein stockwork, intense silicification and numerous dykes.

Three types of mineralization are reported. Porphyry-type Cu-Mo mineralization occurs in two areas of quartz vein stockwork in hornfelsed siliceous sedimentary rocks. Disseminated chalcopyrite, molybdenite and malachite were reported in outcrop over a 1,000 m by 1,200 m area, with grades generally increasing towards faults and dykes. Grab samples returned up to 600 ppm Cu, 190 ppm Mo, 9.4 ppm Ag and 200 ppb Au.

Several diopside skarns containing disseminated chalcopyrite, bornite, sphalerite and molybdenite occur in calcareous rocks near the contact with the intrusion. A grab sample assayed 17 g Ag/t.

Two mineralized breccia zones were also found, peripheral to an extensive quartz vein network. One consists of a 75 m to 100 m wide zone of intense brecciation containing disseminations, blebs and stringers of chalcopyrite, bornite, galena, sphalerite and pyrite. A composite sample across the zone assayed 0.34% Cu, 0.33% Zn, 0.09% Pb and 10 g Ag/t.

In addition to the above, lenses, stringers and disseminations of pyrite parallel to bedding were found in a 5 m thick black shale unit.



Modified from assessment report 091013.

Current Work and Results:

In 1981 and 1982, a program of soil geochemistry and geological mapping was carried out. A ground magnetometer survey was also conducted in 1982.

During the 1981 program, 343 soil samples and 17 rock samples were collected and in 1982, 1,200 soil and 160 rock samples were collected. Samples were analyzed for Cu, Mo, Pb, Zn and Ag. Some soils were also tested for Au, and some rocks for Au, As, Sb, Sn and W.

The Cu-Mo-Ag results indicated an anomaly over a 1,200 by 1,000 m area, generally following the west and south margins of the main intrusion. The Cu-Ag anomaly extends beyond the Mo anomaly to the west and covers the mineralized breccia zone. Within the Mo anomaly, linear higher value zones appear to coincide with better mineralized fault breccia zones and dykes.

A zone of enhanced Pb-Zn values outlines and overlies the southern edge of the Mo-Cu-Ag anomaly. Disseminated sphalerite ± galena was found within this anomaly.

A ground magnetometer survey was partially completed in 1982. Several anomalies indicate possible buried intrusions below the southeastern part of the Cu-Mo zone and along the west edge of the breccia zone.

******

1982 MINERAL CLAIMS STAKED

AM 105 J 4 (27)
SMD Mining Co. Ltd. (62° 13'N,131° 32'W)

Claims 1982: AM 94-99

RAGS 105 J 5 (32)
AGIP Canada Limited (62° 26'N,131° 55'W)

Claims 1982: RAGS 1-8

WENDY 105 J 5 (33)
AGIP Canada Limited (62° 29'N,131° 50'W)

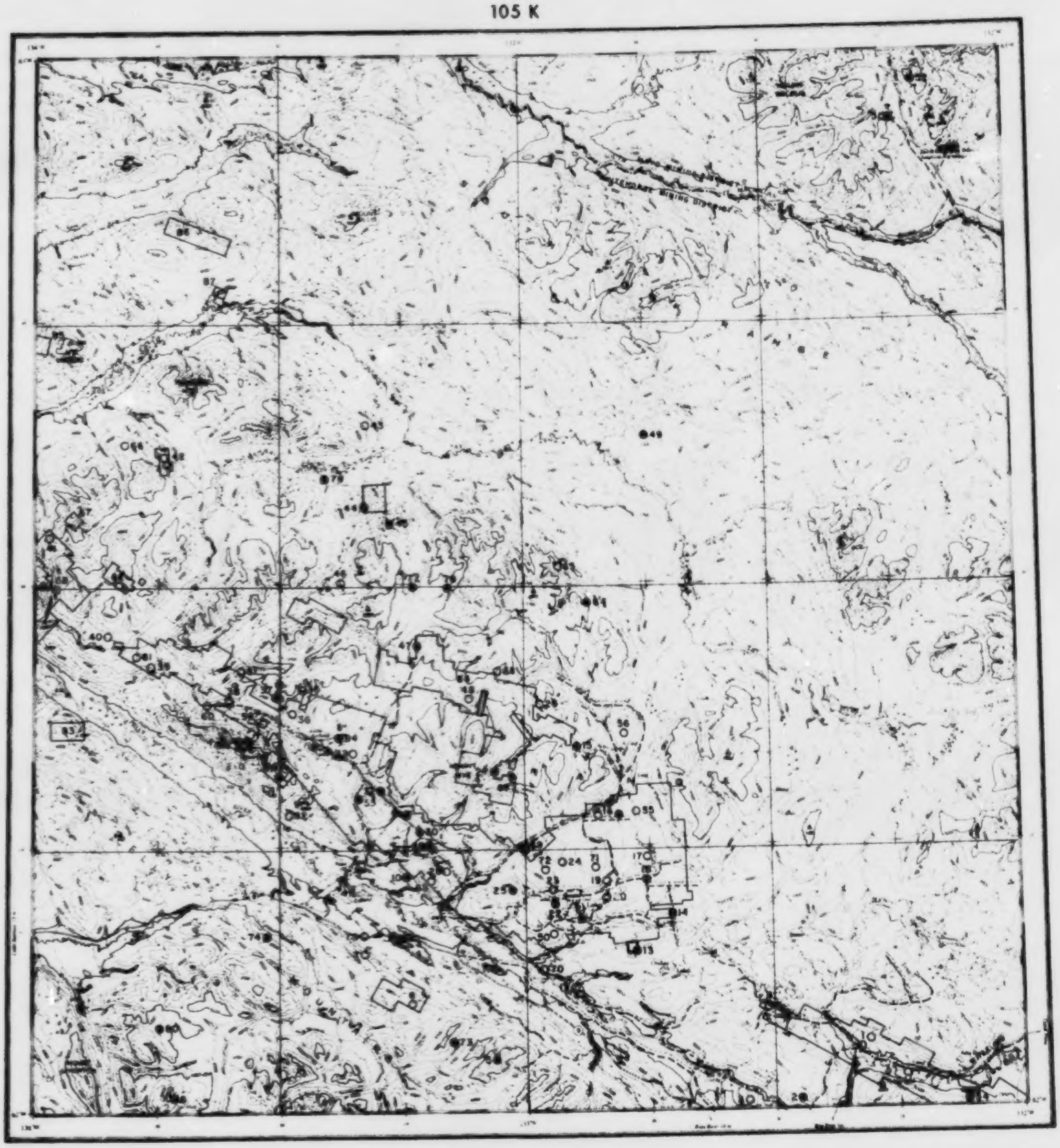
Claims 1982: WENDY 1-16

RUDY 105 J 10 (30)
R. Bendiyen (62° 32'N,130° 43'W)

Claims 1982: R.B. 7-8

******

105 K



TAY RIVER

YUKON TERRITORY

Miles 5 0 5 10 15 20 25 30 Kilometres

●.......Mineral Deposit or Occurrence and Key to Listing	........Placer Leases in good standing (Jan. 1983)	........Tote Trail
○.......Unconventional Target	........Placer Claims in good standing (Jan. 1983)	........Driveable Road
........Mineral Claims in good standing (Jan. 1983) and staked before Jan. 1982	CEL........Coal Exploration Licence	✧........Oil or Gas Well
........Mineral Claims staked in 1982	CML Coal Mining Lease	........Airstrip

TAY RIVER MAP-AREA (NTS 105 K)

General Reference: GSC Map 13-1961 by: J.A. Roddick and L.H. Green, 1961. GSC Open File 212 by: D.J. Tempelman-Kluit, 1974.

NO.	PROPERTY NAME	REFERENCE
1	TENAS	D.I.A.N.D. (1982, p. 154)
2	RAGS (ROSS RIDGE)	Johnston (1936, p. 18)
3	PEN	
4	OLGIE (TER)	Sinclair et al (1976, p. 114)
5	FARGO	Morin et al (1979,p. 64)
6	LYN	D.I.A.N.D. (1981, p. 197)
7	CASCA (RIDGE)	Sinclair et al (1975, p. 135-136)
8	THOMAS	Skarn Zinc Occurrence
9	TAKU	
10	NESBITT	Copper Occurrence
11	BOBCAT	Limestone Stratabound
12	HOLLY	
13	SOCK	Findlay (1967, p. 36); This Report
14	SPUR	Findlay (1969a, p. 47-48)
15	ADAMSON	Tempelman-Kluit (1968, p. 43-52); Sinclair et al (1975, p. 132)
16	BETA	Green (1965, p. 36-37)
17	BLIND (FOTO)	Findlay (1967, p. 40-41); Sinclair & Gilbert (1975, p. 54)
18	CUB	Green (1965, p. 36-37)
19	NASTY	Green (1965, p. 36-37); Craig & Milner (1975, p. 92-93)
20	ABRAHAM	Craig & Milner (1975, p. 92-93)
21	SEA	Green (1965, p. 36-37); D.I.A.N.D. (1982, p. 18,154-155)
22	BS	Sinclair & Gilbert (1975, p. 58)
23	BLACKWOOD (CIVI)	Morin et al (1977, p. 155)
24	BEA	Findlay (1969a, p. 46-47)
25	SWIM	Tempelman-Kluit (1972, p. 42-43); D.I.A.N.D. (1982, p. 18, 154-155)
26	O'CONNOR	Findlay (1967, p. 39-40)
27	MUR	Silver-Lead-Zinc Vein
28	SHRIMP	Green (1965, p. 37-38)
29	VANGORDA	Tempelman-Kluit (1972, p. 46-47)
30	GRUM	This Report
31	KULAN	Tempelman-Kluit (1972, p. 32)
32	KIM	Findlay (1969a, p. 45)
33	LOKO	Morin et al (1977, p. 161)
34	FARO	Tempelman-Kluit (1972, p. 49-65); D.I.A.N.D. (1982, p. 3,18,154-155); This Report
35	FLAGSTONE	
36	BRIDEN	Findlay (1969a, p. 45)
37	JACOLA	Silver-Lead-Zinc Vein
38	CROWN	D.I.A.N.D. (1982, p. 155,158)
39	LORNA	Morin et al (1979, p. 66)
40	RESERVE	Craig & Milner (1975, p. 98-99)
41	COWARD	Lead-Zinc Occurrence
42	COLT	This Report
43	OWL	Craig & Laporte (1972, p. 93-94)
44	KEGLOVIC (HAL)	Sinclair et al (1975, p. 133)
45	IVAN (DANA)	Sinclair et al (1975, p. 133)
46	SHANNON	Findlay (1969a, p. 45)
47	REBEL	Craig & Milner (1975, p. 93-95)
48	KANGAROO	Sinclair et al (1975, p. 129); This Report
49	TEDDY	Skarn Zinc Occurrence
50	SIROLA	
51	LAD	Silver-Lead-Zinc-Copper Vein
52	SOLO	Craig & Laporte (1972, p. 97-98)
53	CESSNA	
54	CHAPLIN (ARO)	Sinclair et al (1975, p. 137)
55	RUTH	D.I.A.N.D. (1981, p. 198)
56	DOT (TEL)	D.I.A.N.D. (1981, p. 198)
57	BRAB	D.I.A.N.D. (1982, p. 155)
58	FISHHOOK	D.I.A.N.D. (1982, p. 155-156)
59	HEK	Sinclair et al (1976, p. 118)
60	MULTI	Sinclair et al (1976, p. 118-119)
61	JOE	Sinclair et al (1976, p. 120)
62	TSS	Sinclair et al (1976, p. 120)
63	DG	Sinclair et al (1976, p. 121)
64	NORK	Sinclair et al (1976, p. 124)
65	ZED	Sinclair et al (1976, p. 124)
66	LOLO	Sinclair et al (1976, p. 126)
67	RAZ	Morin et al (1977, p. 160)
68	MING	Morin et al (1977, p. 161)
69	CAT	Morin et al (1980, p. 45)
70	TAR	Morin et al (1979, p. 63)
71	MN	This Report
72	RACHEL	This Report
73	SIR JOHN A	Morin et al (1980, p. 41)
74	DEV	Morin et al (1980, p. 42)
75	URN	This Report
76	KD	Morin et al (1980, p. 44)
77	CON	Morin et al (1979, p. 68)
78	IRMA	Morin et al (1979, p. 68)
79	LOU	Morin et al (1980, p. 41)
80	MAY	Morin et al (1980, p. 42)
81	EVA	Morin et al (1980, p. 43)
82	LU	Morin et al (1980, p. 43-44)
83	DELAY	D.I.A.N.D. (1982, p. 156)
84	FOO	This Report
85	WAD	This Report
86	LADY DI	This Report
87	CHUCK	D.I.A.N.D. (1982, p. 156)

GRUM
Cyprus Anvil Mining
Corporation Limited

Lead, Zinc, Silver
Stratabound
105 K 3,6 (30)
(62°15'M,133°10'W)

References: D.I.A.N.D. (1982, p.153,154-155); D.I.A.N.D. (1981, p.4,18,197); Sinclair et al (1975, p.130-131).

Claims: GRUM; CHUCK; (10 claims)

Current Work and Results:

In 1982, 24 NQ/BQ diamond drill holes totalling 5,334.0 m were drilled on the GRUM deposit.

******

ANVIL
Cyprus Anvil Mining
Corporation Limited

Lead,Zinc,Silver
Stratabound
105 K 2,3,6,7 (34)

Reference: D.I.A.N.D. (1982, p.154-155).

Current Work and Results:

Operations at the Cyprus Anvil mine at Faro were suspended indefinitely in June, 1982.

SUMMARY OF OPERATIONS OF CYPRUS ANVIL MINING CORPORATION LTD.

Anvil Mine:	1978	1979*	1980	1981	1982
Tonnes Waste Mined	20,070,405	15,267,893	18,101,034	21,908,114	953,549
Tonnes Ore Mined	3,052,695	3,013,160	2,780,085	3,018,851	679,204
Tonnes Milled	3,280,000	2,823,827	2,825,108	2,758,603	1,635,241
Daily Average Milled (tonnes)	9,426	8,129	7,723	7,635	10,613
Mill Heads:					
Lead (%)	3.2	3.3	3.0	2.9	2.8
Zinc (%)	5.1	5.3	4.5	4.8	4.8
Silver (gm/tonne)	34.3	-	42.5	41.7	31.0
Metal Production:					
Lead (kg)	87,849,327	77,017,788	67,941,825	61,528,345	33,905,025
Zinc (kg)	136,348,310	119,911,944	97,522,844	89,224,490	59,392,290
Silver (gm)	66,262,546	41,009,473	71,128,673	55,864,281	28,017,224
Gold (gm)	111,255	30,402	222,111	160,401	62,860
Ore Reserves at Year End:					
Tonnes (000,000's)	34.2	32.0	27.3	34.1	
Lead (%)	3.0	3.1	2.9	3.0	
Zinc (%)	5.6	4.8	4.4	4.6	
Silver (gm/tonne) (approximate)	40.0	37.0	35.0	35.3	

*1979 figures adjusted for 29 days work stoppage.

ORE RESERVES - DECEMBER 31, 1982

Deposit	Reserves 000's tonne	Lead %	Zinc %	Silver g/t	Cutoff Pb&Zn
FARO					
Total geological reserves	33,000	3.0	4.6	35.7	4.0
Mineable open pit reserves	25,200	2.9	4.3	36.1	4.0
Oxide stockpile	1,363	2.9	4.7	37.6	n/a
GRUM*					
Geological reserves	30,781	3.1	4.9	49	4.0
Mine reserves	16,875	3.0	4.9	47	4.0
VANGORDA					
Geological reserves	7,080	3.4	4.3	48	4.0
Mine reserves	5,189	3.4	4.2	47	4.0
DY					
Geological reserves (9.0%)	20,267	5.7	7.0	82	9.0
Geological reserves (12.0%)	11,049	6.7	8.0	100	12.0
SWIM**					
Geological reserves	4,750	3.8	4.7	42	6.0

* no refined estimates of U.G. reserves available.
** inferred minimum Pb & Zn used in calculations.

******

COLT

Overland Exploration Limited
105 K 12 (42)
(62°37'N,133°44'W)

References: D.I.A.N.D. (1981, p.197,198); Craig and Milner (1975, p.99-100).

Claims: TWO 1-16

Source: Summary by P. Watson from assessment report 091022 by S. Clemmen.

History:

The COLT claims were staked in 1980. The area was previously examined in 1970-72 as the BLUE, COLT, KING and ALTA claims.

Current Work and Results:

One diamond drill hole to a depth of 209.4 m was completed in 1981. It intersected a sequence of argillite, sericite schist, cordierite schist and quartz sericite schist. Minor pyrrhotite and pyrite in thin lamellae were reported.

******

RACHEL, MN

Getty Canadian Metals, Limited;
Welcome North Mines Ltd.
105 K 2 (72,71)
(62°14'N,132°56'W)

References: Morin et al (1979, p.63,64); Sinclair et al (1976, p.116).

Claims: RACHEL (43); MN (35); CIVI (11)

Source: Summary by P. Watson from assessment report 091449 by C.W. Payne.

Current Work and Results:

Two diamond drill holes were drilled in 1982 on the RACHEL and MN claims. These holes were 447.0 m and 515.1 m long and intersected various sections (fault bounded in some cases) of Vangorda and Mt. Mye Formation rocks. In one hole, a 0.5 cm galena-pyrite lamina in tuffaceous Vangorda Formation rocks assayed 0.03% Pb, 0.03% Zn and 0.34 g Ag/t. In the other hole, siliceous graphitic phyllite, which, elsewhere in the district hosts mineralization, contained up to 100 ppm Pb, 145 ppm Zn, 1.6 ppm Ag and 25 ppm Ba.

******

URN
Cyprus Anvil Mining Corporation
Bedded Barite
105 K 5,6 (75)
(62° 19'N,133° 30'W)

Reference: D.I.A.N.D. (1982, p.153,156).

Claims: BERT 1-6; AND 1-8; URNIE 1-6; URN(15)

Source: Summary by P. Watson from assessment report 091369 by W.S. Read.

History:

Bedded barite was discovered in eastern Selwyn Basin by Cyprus Anvil Mining Corp. while conducting regional mapping in the Faro area in 1977.

Description:

Ten barite showings occur over a 9 km trend southeast from the northeast slope of Barite Mountain, 6 km west of the Faro open pit. They are hosted in phyllitic chert of the Lower Devonian-Mississippian Earn Group.

Current Work and Results:

Three of the ten barite showings were examined for their open pit potential on behalf of Dome Petroleum Ltd.

The barite showings represent 2 or possibly 3 horizons. The lower horizon has a potential strike length of 3.7 km and 3 known showings. Samples from two of these showings contained 63% $BaSO_4$ with a specific gravity of 3.58 over 10 m, and 48% $BaSO_4$ over 5 m. Potential true thickness is estimated to be 15 to 20 m.

The upper horizon is 600 m up section and is continuously exposed for 1.2 km. It has an estimated true thickness of 12 m and contains 53.1% $BaSO_4$ with a specific gravity of 3.36. Barite float, which may be from these, or a third horizon, is found along strike for 3 km past the last outcrop.

The southeast section of the barite trend is regarded to have the best potential for an open pit operation because of location, size and grade. The best showing is partially exposed over an area of 60 m by 25 m. Sampling over 21.5 m returned 79.22% $BaSO_4$ with a specific gravity of 3.94. The second best showing contains 80.18% $BaSO_4$ with a specific gravity of 3.96 over 9.5 m. Silica is reported to be the main impurity, which makes this ore below direct shipping grade.

******

FOO
Cyprus Anvil Mining Corporation;
Metallgesellschaft Canada Ltd.
Unmineralized Target
105 K 6,7 (84)
(62°23'N,133°05'W)

Reference: D.I.A.N.D. (1982, p. 153,156).

Claims: FOO (51)

Source: Summary by P. Watson from assessment report 091374 by D.S. Jennings.

History:

The claims were staked to cover a section of the contact between Mt. Mye and Vangorda Formation rocks, which, elsewhere in the district, host Pb-Zn sulphide mineralization.

Description:

The property is located 8 km northeast of the town of Faro. It covers the contact between greenschist metamorphic grade pelites and metavolcanic rocks of the upper Paleozoic to lower Ordovician Mt. Mye and Vangorda Formations.

Current Work and Results:

A grid soil geochemical program was carried out in 1982, in which 1,054 samples were collected and analyzed for Pb, Zn and Cu. Uniformly low values were reported for all three elements. Generally, combined Pb+Zn values approaching 1,000 ppm are diagnostic of significant surficial mineral occurrences in the Anvil Range. No values on that order were reported from this survey.

******

WAD
Anaconda Canada
Exploration Limited
Geophysical Target
105 K 12 (85)
(62°44'N,133°59'W)

Reference: D.I.A.N.D. (1982, p.153,156).

Claims: WAD 1-16

Source: Summary by P. Watson from assessment report 091052 by A.R. Scott.

History:

The claims were staked in 1982 to cover EM anomalies defined in an airborne survey.

Description:

The claims lie 3.2 km west of Mount Menzie, within the Selwyn Basin. The area is underlain by chert, shale and coarser-grained clastic sedimentary rocks that have been intruded by mid-Tertiary high-level intrusions and by Cretaceous biotite-quartz monzonite.

Current Work and Results:

A ground geophysical program was conducted to define the location of airborne EM conductors. VLF, Max-Min, magnetometer and gravity surveys were conducted along two traverses.

******

LADY DI	Lead,Zinc,Silver
Welcome North	Stratabound
Mines Limited	105 K 13 (86)
	(62°51'N,133°40'W)

Reference: D.I.A.N.D. (1982, p.2,7,8,153,156).

Claims: LADY DI 1-60

Source: Summary by P. Watson from assessment report 091081 by W.J. Crawford and J.S. Brock and assessment report 091420 by R. Rogers.

History:

The main showing was discovered in 1981 during a Welcome North - Esperanza joint program. It was staked in 1981 for Welcome North Mines Ltd. In 1981, geochemical and magnetometer surveys were followed by trenching on the main showing. The ground was optioned by Noranda Exploration Company Limited in 1982.

Description:

The property is located 55 km northwest of Faro. Stratabound mineralization occurs in Devono-Mississippian rocks near the top of a siltstone unit, and is capped by massive, unfossiliferous Kalzas Formation limestone. Downsection are calcareous siltstone, argillite, ribbon chert and quartzite units. Older chert and chert pebble conglomerate units are located stratigraphically above the showing to the south and a thrust fault contact is assumed.

The main showing is 200 m long and consists of a series of pyrrhotite, sphalerite and galena bodies up to 3 m by 16 m.

Current Work and Results:

In 1981, 396 soil samples were collected and analyzed for Cu, Pb and Zn. A coincident Pb and Zn soil anomaly was outlined over the main showing. Chip samples taken from the main showing in 1982 returned 0.55 % Pb, 9.9 % Zn and 128.5 g Ag/t over 3 m. Two parallel bands of similar mineralization up to 1 m and 3 m thick, respectively, occur three km west of the main showing.

In 1982, Noranda drilled 3 BQ diamond drill holes to a total depth of 187.1 m. All were drilled within 200 m of the main showing. Only one hole intersected mineralization. It contained 0.9 m of massive sphalerite with galena, pyrite and pyrrhotite which assayed 0.08% Pb, 9.60% Zn and 13.7 g Ag/t.

******

1982 MINERAL CLAIMS STAKED

SOCK	105 K 2 (13)
C. Payne	(62°09'N,132°47'W)

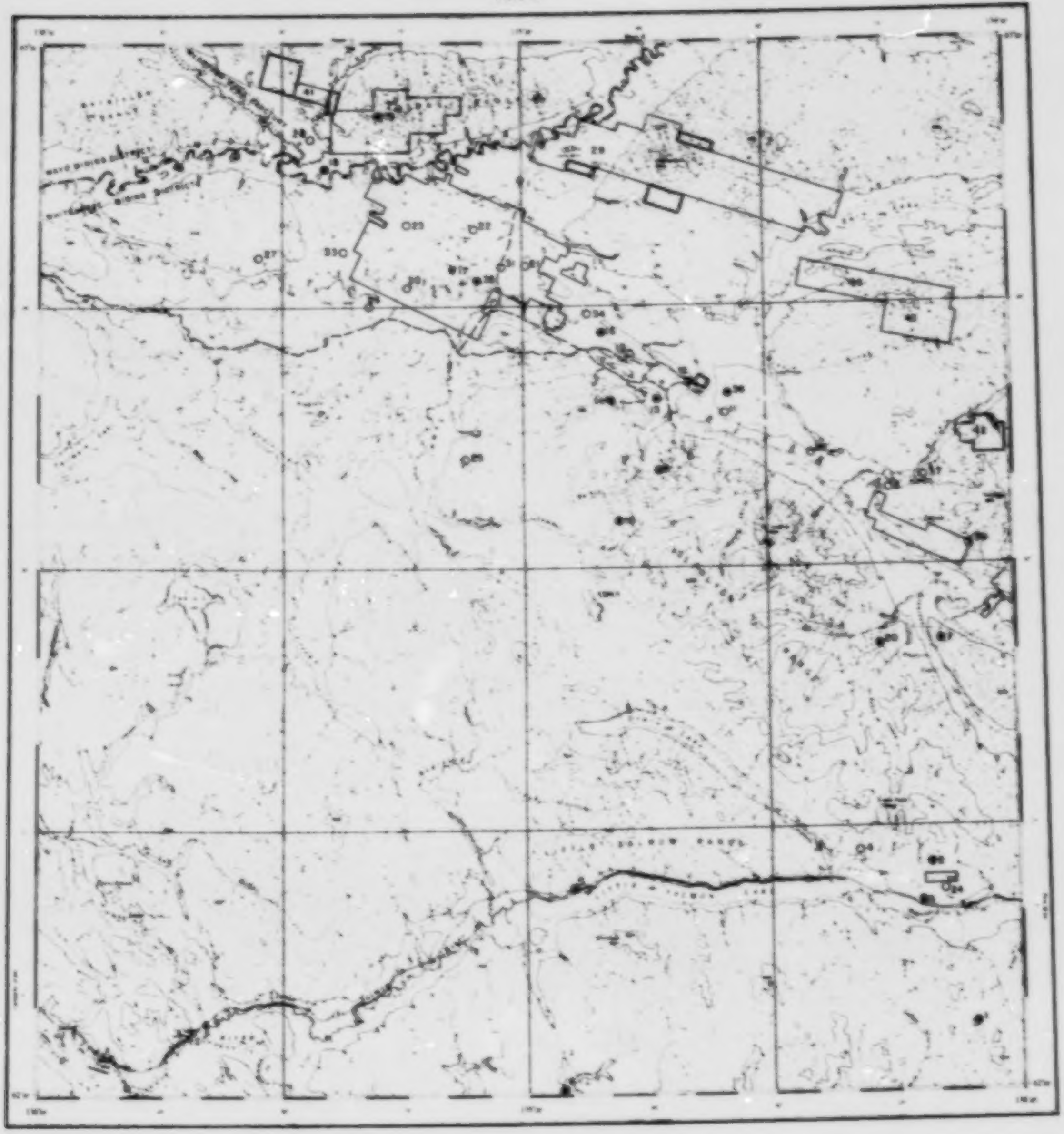
Claims 1982: LINDA 100-103

KANGAROO	105 K 6 (48)
C. Payne	(62°24'N,133°05'W)

Claims 1982: WYNNE 101-105Fr, 106

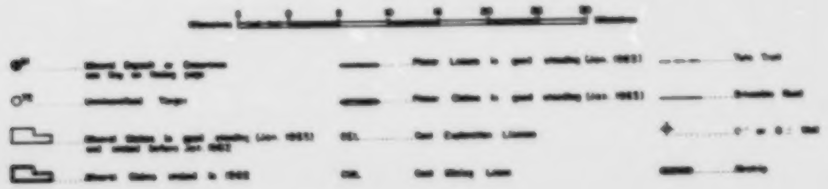
******

105 L



GLENLYON

YUKON TERRITORY



GLENLYON MAP-AREA (NTS 105 L)

General Reference: GSC Map 1221A and Memoir 352 by:
R.B. Campbell, 1967.

NO.	PROPERTY NAME	REFERENCE
1	LOKKEN	Skarn Zinc
2	LITTLE SALMON	Green (1965, p. 38-40)
3	MOULE	Campbell (1967, p. 81); D.I.A.N.D. (1982, p. 163)
4	TRUITT	
5	BRANDY	Campbell (1967, p. 81)
6	JUMPONT	Craig & Laporte (1972, p. 156)
7	GLENLYON LAKE	Copper-Lead Vein
8	HODDER	
9	HARVEY	Johnston (1936, p. 18)
10	TUMMEL	Campbell (1967, p. 81)
11	MUIR	D.I.A.N.D. (1981, p. 200)
12	HUB	Findlay (1969b, p. 28-29); This Report
13	SEARFOSS	Findlay (1969b, p. 28-29)
14	FRONT	Copper-Silver Vein
15	GE	D.I.A.N.D. (1981, p. 200)
16	McCOWAN	Findlay (1969b, p. 28-29)
17	CLEAR LAKE	This Report
18	DUO	Coal
19	MACARTHUR	This Report
20	FELIX	Sinclair *et al* (1976, p. 126)
21	KELLY	
22	TREDGER	
23	CONWEST	
24	DRURY	This Report
25	PETER	D.I.A.N.D. (1981, P. 201)
26	GRAF	D.I.A.N.D. (1981, P. 201)
27	HUGH	D.I.A.N.D. (1981, P. 201)
28	HANK	D.I.A.N.D. (1981, P. 201-202)
29	ONE HUMP	This Report
30	TUM	D.I.A.N.D. (1981, p. 202); D.I.A.N.D. (1982, p. 163)
31	PELLY	D.I.A.N.D. (1981, p. 202)
32	SAP	D.I.A.N.D. (1981, p. 202)
33	RSVP	D.I.A.N.D. (1981, p. 202)
34	WHIP	D.I.A.N.D. (1981, p. 202)
35	HACHEY	Lead-Zinc-Copper
36	JAR	This Report
37	LOBO	Sinclair *et al* (1976, p. 127)
38	END	Sinclair *et al* (1976, p. 128)
39	AM-PM	Morin *et al* (1980, p. 45)
40	RABBIT	This Report
41	BUM	This Report
42	SUE	This Report

CLEAR LAKE	Lead,Zinc,Silver
Getty Canadian Metals, Limited;	Stratiform
Essex Minerals Canada	105 L 10,14,15(17)
	(62°49'N,135°05'W)

References: D.I.A.N.D. (1981, p.85-87,200-201,203);
D.I.A.N.D. (1982, p.159,160,163).

Claims: SUE; GET

Source: Summary by P. Watson from assessment report 091036 by C.W. Payne and assessment report 091411 by R. Vanderhorst.

Current Work and Results:

In 1981, in addition to previously reported work, 1,300 km^2 were covered by a high level, black and white aerial photography survey. Orthophotos of a 200 km^2 area were produced at 1:10,000 scale. The Clear Lake grid was flown at a lower level and 1:2,000 scale orthophotos were produced.

Three diamond drill holes were completed in 1982, for a total of 943.7 m. These holes intersected numerous zones with stringers of pyrite or sphalerite, and occasional galena, and brecciated zones with pyrite or sphalerite. No assays were reported, but visual estimates of 1% to 20% sphalerite over 0.1 m to 0.6 m were reported in some sections of core.

In addition, parts of the claim block were mapped at 1:2,500 scale and grid soil sampled. MAX-MIN, horizontal loop EM, magnetometer and VLF surveys were also conducted.

******

MACARTHUR	Geophysical Target
Anaconda Canada	Bedded Barite
Exploration Limited	105 L 14 (19)
	(62°56'N,135°15'W)

Reference: D.I.A.N.D. (1982, p.159,163).

Claims: KAL 1-80

Source: Summary by K. Grapes from assessment report 091031 by A.R. Scott, assessment report 091065 by R. Hall and assessment report 091393 by R. Hall and A. Scott.

History:

The KAL claims were staked in 1981 to cover airborne geophysical and stream sediment geochemical anomalies delineated in a 1981 reconnaissance program.

Description:

The KAL claims are underlain by a southeasterly plunging anticline, terminated to the west by a stock of biotite quartz monzonite. Calc-silicate hornfels and relatively clean quartz lithic sandstone, possibly correlative to the "Grit Unit", occupy the core of the structure. These rocks are overlain to the southwest by Ordovician Road River Formation, and to the northeast and southwest by strata of the Earn Group. Lower Mississippian Kalzas Formation and younger interbedded siltstone and shale occur along the southern limit of the anticline. This sequence has been thrust in a northeasterly direction over younger, thinly bedded siltstone, shale and chert. The area was uplifted and tilted to the east during the Upper Cretaceous intrusive event. A 15 m thick bedded barite unit occurs in the Earn Group.

Current Work and Results:

During the spring of 1982 five lines were cut, chained and geophysically surveyed (magnetic and Horizontal Loop EM). The presence and location of a complex sequence of EM conductors and magnetic anomalies that were originally indicated in the 1981 airborne survey were confirmed.

Early in the summer, geological mapping at a scale of 1:5,000, stream sediment sampling and geophysical surveying were carried out.

Thirty-one panned stream sediment samples (-20 mesh) and 13 stream sediment samples were collected. The -80 mesh fraction of stream sediment samples was analyzed for Cu, Pb, Zn, and the -20 mesh fraction for Ba, Sn and W. Results for -20 mesh pan samples indicate occurrences of minor tungsten mineralization in association with calc-silicate hornfels.

Later in the summer, 61 km of line were cut and 1,800 soil samples and 65 rock chip samples of bedded barite were collected on the CAVE grid. Samples were analyzed for Cu, Pb, Zn, Ag and selectively for Hg and/or Ba. Anomalies in soils are semi-continuous over a minimum strike length of seven km.

Forty-five line-km of total field magnetometer, 31 line-km of horizontal loop electromagnetic, one line-km of gravity and four line-km of self-potential surveys were conducted. These surveys have outlined three parallel, 0.5 km to 1.0 km wide zones trending east-west. EM conductors are believed to primarily indicate graphite horizons, and magnetic anomalies are believed to indicate horizons of increased magnetite and/or pyrrhotite content.

******

DRURY	Zinc,Lead,Silver
Cominco Limited	Skarn
	105 L 1 (24)
	(62°12'N,134°09'W)

References: D.I.A.N.D. (1982, p.159); D.I.A.N.D. (1981, p.200,203).

Claims: SALMON (14)

Source: Summary by P. Watson from assessment report 091372 by I.A. Paterson.

History:

The skarn was first staked in 1959 and optioned to Prospectors Airways Ltd., who conducted geophysical surveys and drilled 166.7 m in 20 holes between 1953 and 1956. These claims lapsed and the area was restaked in 1962 and optioned to Kerr Addison Mines Ltd. in 1964. Geophysical surveys and 337.4 m in 4 diamond drill holes were completed. Atlas Exploration optioned the ground in 1965 and conducted airborne and ground geophysical surveys and a geochemical program. The SALMON claims were staked in 1980 to re-evaluate the Au-Ag-Sn-W potential of the Pb-Zn-Ag skarn.

Description:

The area, 40 km west of Faro, is underlain by Devono-Mississippian(?) calcareous chert overlain by resistant limestone. These units have been domed into an anticline, the core of which contains a Cretaceous-Tertiary quartz-feldspar porphyry. Garnet-diopside-calcite-quartz-magnetite skarn has developed in the chert for up to 60 m from the intrusive contact.

Current Work and Results:

In 1982, four areas were examined with follow up rock and soil geochemistry. Eleven rock and 40 soil samples were collected.

******

ONE HUMP
Anaconda Canada
Exploration Limited

Copper, Tungsten
Skarn
105 L 15,16 (29)
(62°54'N,134°50'W)

Reference: D.I.A.N.D. (1982, p.159-163).

Claims: ACE 1-754; EARN 1-4; CLARE 1-76; BUSH 1-48

Source: Summary by K. Grapes from assessment reports 091032, 091037 and 091039 by A.R. Scott.

Current Work and Results:

During the winter of 1982 a linecutting and geophysical program was carried out over the CLARE 43-48, 55-66 and BUSH 1-32 claims. MAX-MIN and magnetometer surveys were conducted on the BUSH claims. VLF and MAX-MIN electromagnetic, gravity and magnetometer surveys were conducted on the CLARE claims. The results of the surveys confirmed the presence and ground location of several EM conductors and magnetic anomalies detected by a 1981 airborne geophysical survey.

Grids were mapped at a scale of 1:5,000 and 3,570 soil samples were collected at 25 m intervals. The samples were analyzed for Cu, Pb, Zn, Ag and, selectively, for Ba. A bedded barite lens occurs in middle Mississippian chert-siltstone on the ACE claims.

******

JAR
Getty Canadian
Metals, Limited

Barite Stratiform
105 L 16 (36)
(62°45'N,134°15'W)

Reference: D.I.A.N.D. (1982, p.159,163).

Claims: JAR (202)

Source: Summary by P. Watson from assessment report 091405 by N. Hulstein.

History:

The JAR claims were staked in 1981 to cover a 20 m thick barite horizon containing 41.1% Ba which was located during reconnaissance mapping.

Description:

The JAR claims are located south of Earn Lake. The property is underlain in the north by interbedded limestone and siltstone with occasional graphitic shales of the Road River Formation, cut by hypabyssal rocks of the Cretaceous South Fork Volcanics. To the south, 50 m of crinoidal limestone of the Devonian-Mississippian Kalzas Formation can be traced along strike for 12 km. The overlying Devonian-Mississippian Earn Group can be subdivided into 3 components. These are: up to 700 m of black, red and green chert, baritic siltstone and black shales; up to 1,000 m of interbedded black organic shale, siltstone, limestone and quartzite; and up to 500 m of thick quartzite lenses. To the south, these rocks have been intruded by a Cretaceous muscovite biotite granite to granodiorite plug.

Current Work and Results:

The barite horizon was traced for 4.5 km west and 1 km east of the initial showing. Barite is also found as float in a stream 2 km east of the easternmost outcrop. The western exposure consists of bedded, nodular Ba in black chert containing greater than 15% Ba. To the east, barite is laminated with black chert and contains up to 10% Ba.

A 1.5 m wide bed of stratiform pyrite nodules (up to 20 cm in diameter) in black chert was mapped stratigraphically above the barite horizon. Samples contained 1,425 ppm Zn and 19.5 ppm Ag.

In 1982, 159 stream sediment and 41 rock chip samples were collected and analyzed for up to 13 elements. In addition, 20 soil and 30 stream sediment samples were collected near the barite horizon. Coincident Cu-Ag-Pb-Zn stream sediment anomalies were delineated.

******

RABBIT
Anaconda Canada
Exploration Limited

Geophysical Target
105 L 9 (40)
(62°43'N,134°12'W)

Reference: D.I.A.N.D (1982, p.159,160-163).

Claims: RABBIT 1-128

Source: Summary by P. Watson from assessment report 091038 by A.R. Scott.

History:

The claims, located 33 km southeast of Dromedary Mountain, were staked in 1981. An airborne geophysical program was conducted on these and related claim blocks in the same year. This information is summarized along with the detailed regional geology in the section on ONE HUMP (#29), D.I.A.N.D., 1982, p.160-163.

Current Work and Results:

The winter, 1982 program consisted of three ground geophysical surveys; MAX-MIN, VLF and magnetometer. These confirmed the presence and defined the ground location of several electromagnetic conductors that were delineated during the 1981 airborne survey.

******

BUM	Geophysical Target
Anaconda Canada	105 L 14 (41)
Exploration Limited	(62° 52'N,135° 25'W)

Reference: D.I.A.N.D. (1982, p.159,163).

Claims: BUM 1-32

Source: Summary by K. Grapes from assessment report 091033 by A.R. Scott.

History:

The BUM claims are located approximately eight km west of Kalzas Mountain and were staked in 1981.

Description:

The property is underlain by turbidites of the Lower Earn Group, which are bordered to the south by phyllite and carbonate facies of the Keckika Group and Road River Formation.

Current Work and Results:

During the spring of 1982 a program of line-cutting and geophysical surveying was carried out to further investigate electromagnetic conductors detected by an airborne survey conducted in the spring of 1981. Horizontal Loop EM, magnetometer and gravity surveys were completed. The gravity survey did not outline any anomalies. The Horizontal Loop EM and magnetometer surveys confirmed the presence and location of a complex sequence of EM conductors and magnetic anomalies.

In 1982, the claims were also mapped at a scale of 1:5,000 and 852 soil samples were collected and analyzed for Cu, Pb, Zn, Ag and, selectively, for Ba.

******

1982 MINERAL CLAIMS STAKED

SUE	105 L 9 (42)
J. Witham, R. Koser	(62° 37'N,134° 03'W)

Claims 1982: SUE 1-62

HUB	105 L 10 (12)
Jalna Resources	(62° 40'N,134° 23'W)

Claims 1982: ROG 43-48

BUM	105 L 13, 14 (41)
L. Johnson	(62° 59'N,135° 30'W)

Claims 1982: BUM 33-106

ONE HUMP	105 L 15 (29)
Anaconda Exploration	(62° 51' - 62° 53'N, 134° 42'- 134° 53'W)

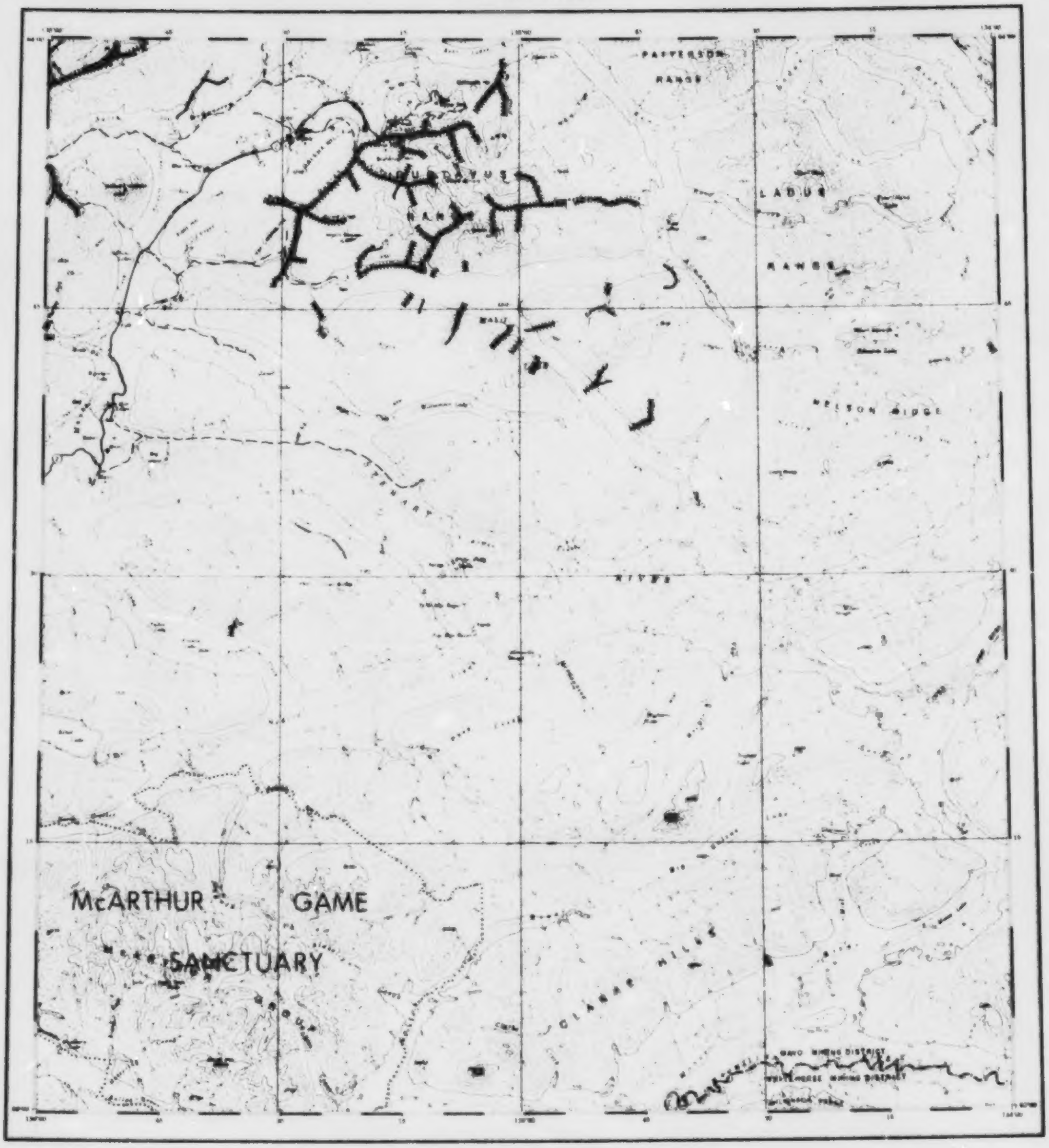
Claims 1982: BUSH 33-48; ACE 719-754; CLARE 65-76

MAYO MAP-AREA (NTS 105 M)

General Reference: GSC Map 890A by: H.S. Bostock, 1947.
GSC Open File 710 by: M.P. Cecile, 1980.

NO.	PROPERTY NAME	REFERENCE
1	UNITED KENO HILL	D.I.A.N.D. (1982, p. 3,18,165-167); This Report
2	FAITH	D.I.A.N.D. (1981, p. 206)
3	DUNCAN	Boyle (1965, p. 56)
4	GOLD QUEEN	Boyle (1965, p. 52); Green (1966, p. 18-19)
5	SILVER BASIN	Boyle (1965, p. 51)
6	NABOB #2	Boyle (1965, p. 51)
7	LADUE FRACTION	Boyle (1965, p. 40)
8	COMSTOCK	Boyle (1965, p. 39,40,42); Green (1966, p. 15)
9	APEX	Boyle (1965, p. 42-43)
10	VANGUARD	Boyle (1965, p. 47); Green & Godwin (1963, p. 11)
11	HOMESTAKE	Boyle (1965, p.52-53); Findlay (1967, p. 22)
12	CHRISTINE	Findlay (1969a, p. 25)
13	MO	Silver-Lead Vein
14	MAYBRUN	D.I.A.N.D. (1981, p. 206)
15	HOGAN	Boyle (1965, p. 46-47)
16	RUNER	Boyle (1965, p. 46-47)
17	WERNECKE	Findlay (1969b, p. 12)
18	FORMO	D.I.A.N.D. (1982, p. 167)
19	PADDY	Craig & Laporte (1972, p. 14)
20	EAGLE	D.I.A.N.D. (1981, p. 206)
21	FISHER	D.I.A.N.D. (1981, p. 207)
22	PARENT	D.I.A.N.D. (1982, p. 169)
23	CREAM AND JEAN	Boyle (1965, p. 78)
24	NORD	Craig & Laporte (1972, p. 13-14)
25	GERLITZKI	Green & Godwin (1963, p. 8); D.I.A.N.D. (1982, p. 165)
26	UR	Green & Godwin (1964, p. 13); D.I.A.N.D. (1982, p. 165)
27	SHANGHAI	Findlay (1967, p. 24-25)
28	WAYNE	D.I.A.N.D. (1982, p. 167)
29	ARGENT	D.I.A.N.D. (1981, p. 211)
30	STREBCHUCK (JOUMBIRA)	This Report
31	MT. HALDANE	D.I.A.N.D. (1981, p. 207,211)
32	LAYSIER	D.I.A.N.D. (1981, p. 211)
33	COBALT	Green (1971, p. 61)
34	GORDON	Sinclair & Gilbert (1975, p. 16-17)
35	TWO BUTTES	Garrett(1971); D.I.A.N.D. (1982, p. 167)
36	SIDE SLIP	Skarn Copper
37	PIMA	Skarn Tungsten-Copper-Zinc
38	HOT SPRING	Silver-Lead Vein
39	LOST WERNECKE COPPER	
40	ROOP	Little (1959, p. 36-37)
41	MOON	Silver-Lead Vein; D.I.A.N.D. (1982, p. 169)
42	MT. ALBERT	Silver-Lead Vein
43	McKIM	Silver-Lead Vein
44	NERO	Silver-Lead Vein
45	FREISEN	Skarn Copper-Tungsten-Molybdenum-Silver-Gold
46	MT. HINTON	Findlay (1969a, p. 23)
47	AVENUE	Craig & Milner (1975)
48	CHANCE	Antimony Vein
49	YONO	Silver-Lead Vein
50	SUNDOWN	D.I.A.N.D. (1981, p. 211)
51	GUSTAVUS	Silver-Lead Vein
52	NEWRY	
53	CHRISTAL	D.I.A.N.D. (1981, p. 208)
54	SEGSWORTH	Silver-Lead-Zinc Vein
55	IRONCLAD	Silver-Lead-Zinc Vein
56	SINISTER	D.I.A.N.D. (1981, p. 208); This Report
57	ZAP	D.I.A.N.D. (1982, p. 168)
58	W	D.I.A.N.D. (1981, p. 209)
59	AZTEC	
60	FLO	D.I.A.N.D. (1982, p. 168,169); This Report
61	WEASEL	D.I.A.N.D. (1981, p. 211)
62	FEEBLE	D.I.A.N.D. (1981, p. 211)
63	CLEAVES	D.I.A.N.D. (1981, p. 211)
64	ROSS	D.I.A.N.D. (1981, p. 211); D.I.A.N.D. (1982, p. 169)
65	GAMBLER	D.I.A.N.D. (1981, p. 209)
66	BE NO. 1	D.I.A.N.D. (1982, p. 168)
67	BE NO. 2	D.I.A.N.D. (1982, p. 168)
68	BE NO. 3	This Report
69	BE NO. 4	This Report
70	DIAMOND	D.I.A.N.D. (1981, p. 210)
71	HEART	Morin et al (1980, p. 8)
72	DOPE	D.I.A.N.D. (1982, p. 168); This Report
73	DRILL	D.I.A.N.D. (1982, p. 169); This Report
74	SWIFT BANANAS	D.I.A.N.D. (1982, p. 169)
75	TUF	D.I.A.N.D. (1982, p. 169)
76	LEETEE	D.I.A.N.D. (1982, p. 169)
77	ISABEL	D.I.A.N.D. (1982, p. 169); This Report
78	GOLDEN DUKE	This Report
79	ORE	This Report

105 M PLACER

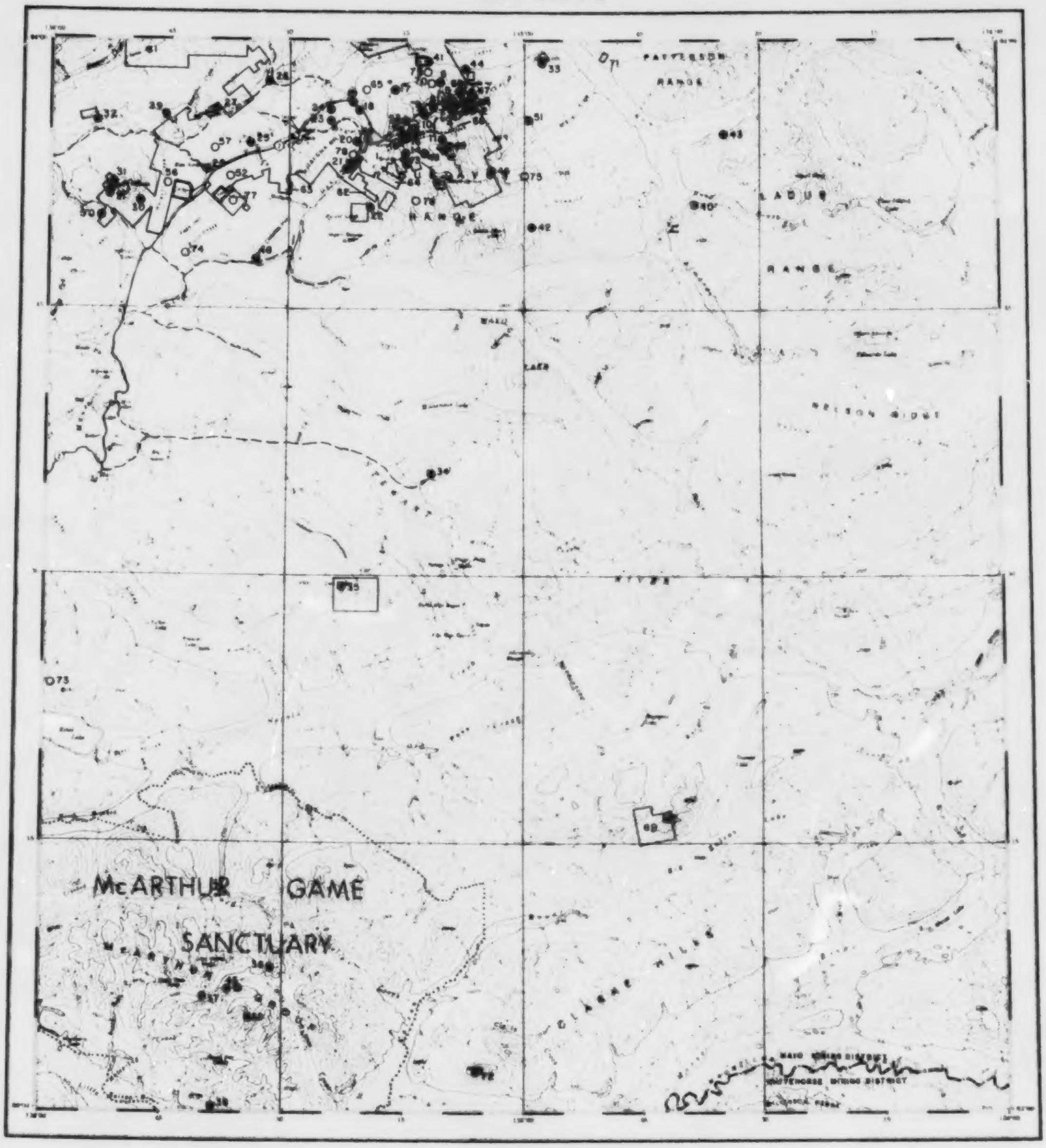

PATTERSON RANGE
LADUE RANGE
NELSON RIDGE
STEWART
RIVER
McARTHUR GAME SANCTUARY
CLARKE HILLS
MAYO MINING DISTRICT
WHITEHORSE MINING DISTRICT

MAYO
YUKON TERRITORY

Kilometres 5 0 5 10 15 20 25 30 Kilometres

●	Mineral Deposit or Occurrence see Key on facing page	▬	Placer Leases in good standing (Jan. 1983)	— — —	Tote Trail
○	Unconventional Target	▬	Placer Claims in good standing (Jan. 1983)	———	Drivable Road
▭	Mineral Claims in good standing (Jan 1983) and staked before Jan 1982	CEL	Coal Exploration License	✦	Oil or Gas Well
▭	Mineral Claims staked in 1982	CML	Coal Mining Lease	▬	Airstrip

105 M QUARTZ


PATTERSON
RANGE
RANGE
RANGE
NELSON RIDGE
McARTHUR GAME SANCTUARY
MAYO MINING DISTRICT
WHITEHORSE MINING DISTRICT
33
51
43
40
42
75
34
35
73
69
72
31
32
39
57
52
74
77
76
61
65

MAYO
YUKON TERRITORY

Kilometres 5 0 5 10 15 20 25 30 Kilometres

●	Mineral Deposit or Occurrence see Key on facing page	▬	Placer Leases in good standing (Jan. 1983)	– – –	Tote Trail
○	Unmineralized Target	▬	Placer Claims in good standing (Jan. 1983)	—	Drivable Road
▭	Mineral Claims in good standing (Jan. 1983) and staked before Jan. 1982	CEL	Coal Exploration Licence	✧	Oil or Gas Well
▭	Mineral Claims staked in 1982	CML	Coal Mining Lease	▬	Airstrip

UNITED KENO HILL
United Keno Hill
Mines Limited

Silver,Lead,Zinc
Veins
105 M 13,14 (1)
(63° 53' - 63° 58'N,
135° 04', 135° 35'W)

Reference: D.I.A.N.D. (1982, p.165-167,169).

Claims: SNOWDRIFT 1-29; KPO 18-29; BUCONJO 17-24

Source: Summary by K. Grapes from assessment report 091049.

Current Work and Results:

In October 1981, 46 overburden holes totalling 1,606.3 m were drilled on the SNOWDRIFT 5, 22-24, 26-29 claims.

In 1982, 45 diamond drill holes totalling 135.6 m were completed on the RUBY and TOWNSITE vein systems. Overburden drilling on SNOWDRIFT, TOWNSITE, HECTOR, JOCK, RUBY, SADIE LADUE, BLACKCAP and MASTIFF vein systems totalled 7,380.7 m in 240 holes.

All mine operations were suspended indefinitely in July 1982. The mine remained closed on December 31, 1982.

SUMMARY OF OPERATIONS OF UNITED KENO HILL MINES LTD.

Summary of Production from Keno Hill - Galena Hill Mines:

	1978	1979	1980	1981	1982
Tonnes Mined	127,424	155,361	95,067	63,478	50,355
Tonnes Milled	81,722	111,685	79,655	60,840	50,355
Daily Average Milled (tonnes)	326	406	388*	367	360
Mill Heads:					
Silver (gm/tonne)	1,224	818	789	754	843
Lead (%)	5.5	3.7	3.4	2.5	---
Zinc (%)	0.8	0.6	0.8	---	---
Metal Production:					
Silver (gm)	90,741,633	78,907,533	58,963,139	36,020,435	37,283,765
Lead (kg)	3,448,912	2,726,862	2,212,353	1,019,649	778,135
Zinc (kg)	11,971	379,164	413,043	---	---
Cadmium (kg)	171	---	---	---	---
Metal Sales:					
Revenues from Shipments ($)	18,162,909	53,226,219	31,742,000	12,561,000	
Ore Reserves at year end:					
Tonnes	99,517	299,951	435,811	242,636	
Silver (gm/tonne)	1,364	998	846	926	
Lead (%)	4.9	4.3	3.4	4.1	
Zinc (%)	0.9	---	---	---	

*adjusted for strike of 122 days.

COMPARATIVE STATEMENT OF PRODUCTION BY YEARS*

Fiscal Year	Ore Milled Tons	Silver Oz.	Lead Lbs.	Zinc Lbs.	Cadmium Lbs.
Total For Years:					
1947 to 1969.........	3,002,515	108,831,203	397,618,532	308,934,611	3,902,230
Dec. 31, 1970........	93,215	2,601,960	6,583,652	7,467,164	98,687
Dec. 31, 1971........	94,754	2,919,693	8,220,513	6,533,208	84,832
Dec. 31, 1972........	80,646	2,503,921	6,108,042	3,307,178	46,731
Dec. 31, 1973........	94,819	3,134,828	7,262,400	1,345,062	17,944
Dec. 31, 1974........	93,232	3,237,205	6,734,719	545,357	7,330
Dec. 31, 1975........	90,860	2,917,920	6,407,368	620,763	8,758
Dec. 31, 1976........	75,515	2,369,770	4,909,101	621,945	8,394
Dec. 31, 1977........	91,486	2,784,098	5,911,083	450,904	6,135
Dec. 31, 1978........	90,082	2,737,755	7,521,014	17,993	211
Dec. 31, 1979........	124,322	2,481,356	5,620,065		
Dec. 31, 1980........	87,784	1,664,386	3,296,052		
Dec. 31, 1981........	66,924	1,158,083	2,243,228		
Dec. 31, 1982........	55,491	1,198,734	2,084,836		
TOTAL........	4,141,645	140,540,912	470,520,605	329,844,185	4,181,252

*United Keno Hill Mines Limited, Annual Report, 1982.

ORE RESERVES*

In Situ Proven and Probable at December 31, 1982.

ELSA AREA:

	1982			1981		
	Tons	Silver oz/ton	Lead %	Tons	Silver oz/ton	Lead %
Underground Ore Reserves						
Proven	37,600	34.3	4.6	57,400	32.0	4.2
Probable	68,300	29.7	4.3	79,000	30.2	4.5
Sub-total	105,900	31.4	4.4	136,400	31.2	4.2
Open Pit						
Probable	77,900	21.0	3.1	90,400	22.8	3.4
Total Ore Reserves	183,800	27.0	3.9	226,800	27.9	4.0
Stockpile Reserves	25,500	16.9	2.8	40,100	22.4	4.4
Total Ore in Reserve and Stockpile	209,300	25.8	3.7	266,900	27.0	4.1

*United Keno Hill Mines Limited, Annual Report, 1982.

Production from Individual Mines by United Keno Hill Mines Ltd.

1981:

Mine	Silver Grade (gm/t)	Tonnes Milled	Drifts & Crosscuts (metres)	Raises (metres)	D.D. (metres)
ELSA	798.8	1,963.6	38.7	12.8	1,947
KENO	840	26,305.5	55.8	5.5	---
NO CASH	---	1,000	5.8	---	---
RUBY	1,453.7	3,346	60.0	1.8	---
HUSKY	1,162	12,480	175	4.3	---
SIME & BERMINGHAM	576	40,996	----------	Open Pits	----------
PORCUPINE	---	---	---	86.0	---
Total		86,091	335.3	110.4	1,947

1982:

Mine	Silver Grade (gm/t)	Tonnes Milled
ELSA	1,069.7	2,356
KENO		
NO CASH		839
RUBY		4,899
HUSKY	1,162.3	13,746
SIME & BERMINGHAM		
PORCUPINE		
Total		21,840

Reserves of Individual Mines at Year End:

Mine	1979		1980		1981		1982	
	Reserves (tonnes)	Silver Grade (gm/t)	Reserves (tonnes)	Silver Grade (gm/t)	Reserves (tonnes)	Silver Grade (gm/t)	Reserves (tonnes)	Silver Grade (gm/t)
ELSA	19,051	---	11,714	1,008	8,769	1,131.4	10,972	1,100.6
COMSTOCK KENO	8,372	1,029	8,372	1,029	---	---	---	---
KENO	39,114	830	27,668	809	26,305.5	840	20,324	881.2
NO CASH	13,182	902	17,518	819	17,015	822.8	9,756	812.6
RUBY	12,734	1,128	10,836	998	8,535	970.3	3,672	1,076.6
HUSKY	50,850	1,505	47,258	1,330	1,385	44,432.7	35,842	1,296.0
SIME & BERMINGHAM	104,738	790	73,188	904	---	---	---	---
OTHER OPEN PIT RESERVES	10,976	---	133,755	---	5,854.5	925.7	---	---
OTHER UNDERGROUND RESERVES	40,934	---	105,502	---	---	---	---	---
PORCUPINE	---	---	---	---	---	---	13,531	956.6
Total	299,951	---	435,811	---	67,864.0	---	94,097	---

******

STREBCHUCK (JOUMBIRA)
~~CCH Minerals Limited;~~
Billiton Canada Limited;
Inco Limited

Tin,Tungsten,Lead
Zinc
105 M 13 (30)
(63°51'N,135°50'W)

References: D.I.A.N.D. (1982, p.165); Morin *et al* (1980, p.6).

Claims: JOUMBIRA 1-56

Source: Summary by K. Grapes from assessment report 091053 by B. Paul and D. Rota.

Current Work and Results:

A limited program of soil geochemical sampli
and prospecting was carried out in 1979 resulting
the discovery of a small, vuggy, scheelite-beari
quartz vein above Aldis Creek. No field work w

conducted in 1980, however an orthophoto of the property was produced. In 1981 most of the property was remapped at 1:5,000 scale and detailed soil geochemical surveys were completed around the PRO and FRED showings.

Cassiterite occurs in accessory amounts on the margin of a quartz porphyry dyke and in sheeted fractures with chlorite and tourmaline. Scheelite occurs associated with quartz porphyry dykes and late, vuggy, quartz veins. Arsenopyrite, sphalerite and galena have been identified in quartz veins and greisen veins associated with the main intrusive stock.

******

FLO

Union Carbide
Exploration Limited

Tungsten Vein,
Stockwork
105 M 7 (60)
(63°16'N,134°42'W)

Reference: D.I.A.N.D. (1982, p.168).

Claims: WOLF; DAVID; PAT; BLACKIE; (59)

Current Work and Results:

In 1982, the entire claim block was mapped at 1:2,000 scale and bulk rock samples were collected for W and Sn geochemistry along 200 m spaced grid lines. Eighty metres of overburden trenching and 100 m of bedrock trenching were also completed. Results indicate broad areas of tungsten mineralization, and trenching suggests bedrock grades of less than 0.1% WO_3.

******

BE No. 3,4

Canada Tungsten Mining
Corporation Limited

Silver,Lead,Zinc
Vein
105 M 14 (68,69)
(63°57'N,135°02'W)

Reference: D.I.A.N.D. (1982, p.165,168).

Claims: BE (282 claims and 38 fractions)

Source: Summary by K. Grapes from assessment report 091386 by G. McLaren.

Current Work and Results:

Reconnaissance mapping at 1:5,000 scale, prospecting and geochemical sampling of the BE 285Fr-322Fr were completed in August 1982. No significant new mineralized vein structures were located. Sampling was done in the area between McNeill and McMillan Gulches where numerous vein and stockwork structures occur. A total of 13 rock chip samples were taken from veined and/or altered exposures and analyzed for Pb, Zn, Ag, and Au. A quartz vein with coarsely disseminated galena returned values of greater than 10,000 ppm Pb, 56 ppm Zn, greater than 100 ppm Ag and 140 ppb Au.

A thick section of massive quartzite mapped on the southern slope of Keno Hill can be traced across the lower, northern slope of the ridge east of McMillan Gulch. Overlying the quartzite is a sequence of interbedded quartzite, schist and phyllite. Numerous quartz-calcite veins, stockworks and breccia zones are present with evidence of galena, pyrite and/or arsenopyrite mineralization. A few rock chip samples from these veins returned high values of Pb, Ag, and Au. The veins, however, are discontinuous and of limited width due to the intensely fractured nature of the host. A sample of quartzite float with trace arsenopyrite returned values of up to 2,800 ppb Au.

******

DOPE

Amax of Canada Limited

Unmineralized
Target
105 M 3 (72)
(63°03'N,135°05'W)

Claims: DOPE (42)

Current Work and Results:

The claims were prospected at 1:12,000 scale in 1982. They are underlain by Devonian green pebble chert conglomerate.

******

DRILL

Amax of Canada Limited

Tungsten
105 M 5, 115 P 5
(73)
(63°25'N,136°00'W)

Claims: DRILL 1-60

Current Work and Results:

Mapping at 1:12,000 scale and stream sediment sampling programs were carried out in 1982. Scheelite occurs in widely spaced quartz-sericite-pyrite±tourmaline veins cutting Hadrynian grit.

******

1982 MINERAL CLAIMS STAKED

SINISTER 105 M 13 (56)
Canada Tungsten Mining Corporation Limited (63°52'N,135°44'W)

Claims 1982: SS 1-29

ISABEL 105 M 13 (77)
(63°51'N,135°38'W)

Claims 1982: VERA 1-8

GOLDEN DUKE 105 M 14 (78
(63° 53'N,135° 22'W

Claims 1982: GOLDEN DUKE 1-4; SILVER DUKE 1-8;
JUNE 1-4

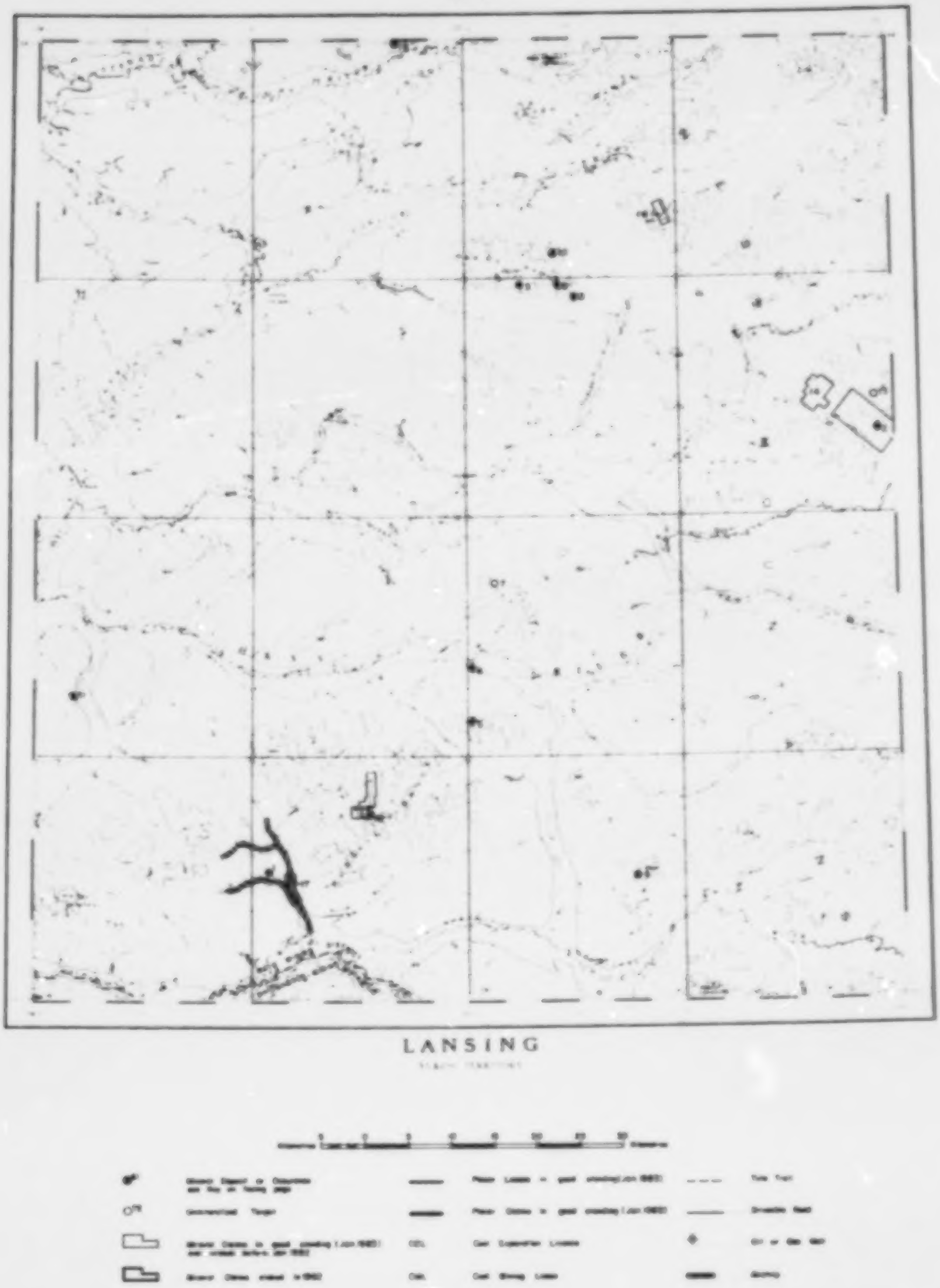
ORE 105 M 14 (79
(63° 59'N,135° 12'W

Claims 1982: ORE 1-4; MT 1-6

******

NOTES

105N



LANSING

[illegible]

LANSING MAP-AREA (NTS 105 N)

General Reference: GSC Open File 205 by: S.L. Blusson, 1974.
GSC Open File 710 by: M.P. Cecile, 1980.

NO.	PROPERTY NAME	REFERENCE
1	ARMSTRONG	Mulligan (1975, p. 74)
2	GREG (PLATA)	Morin *et al* (1977, p.111)
3	JOY	Copper Occurrence
4	GOLF	Skarn Copper
5	ETZEL	Copper Vein
6	BRODELL	Copper Vein
7	PEBBLE	Lead Occurrence
8	DEAN	Lead Vein
9	AUREOLE	Copper Vein
10	BLOOM	Copper-Molybdenum-Lead-Cobalt Vein
11	PLEASANT	Skarn Copper-Tungsten-Silver
12	TONGUE	Skarn Tungsten-Copper-Tin
13	KIDD	Morin *et al* (1977, p. 119)
14	FLATASA	D.I.A.N.D. (1982, p. 171)
15	SPIS	D.I.A.N.D. (1981, p. 213)
16	ANDREA	D.I.A.N.D. (1982, p. 171)
17	RAM	This Report

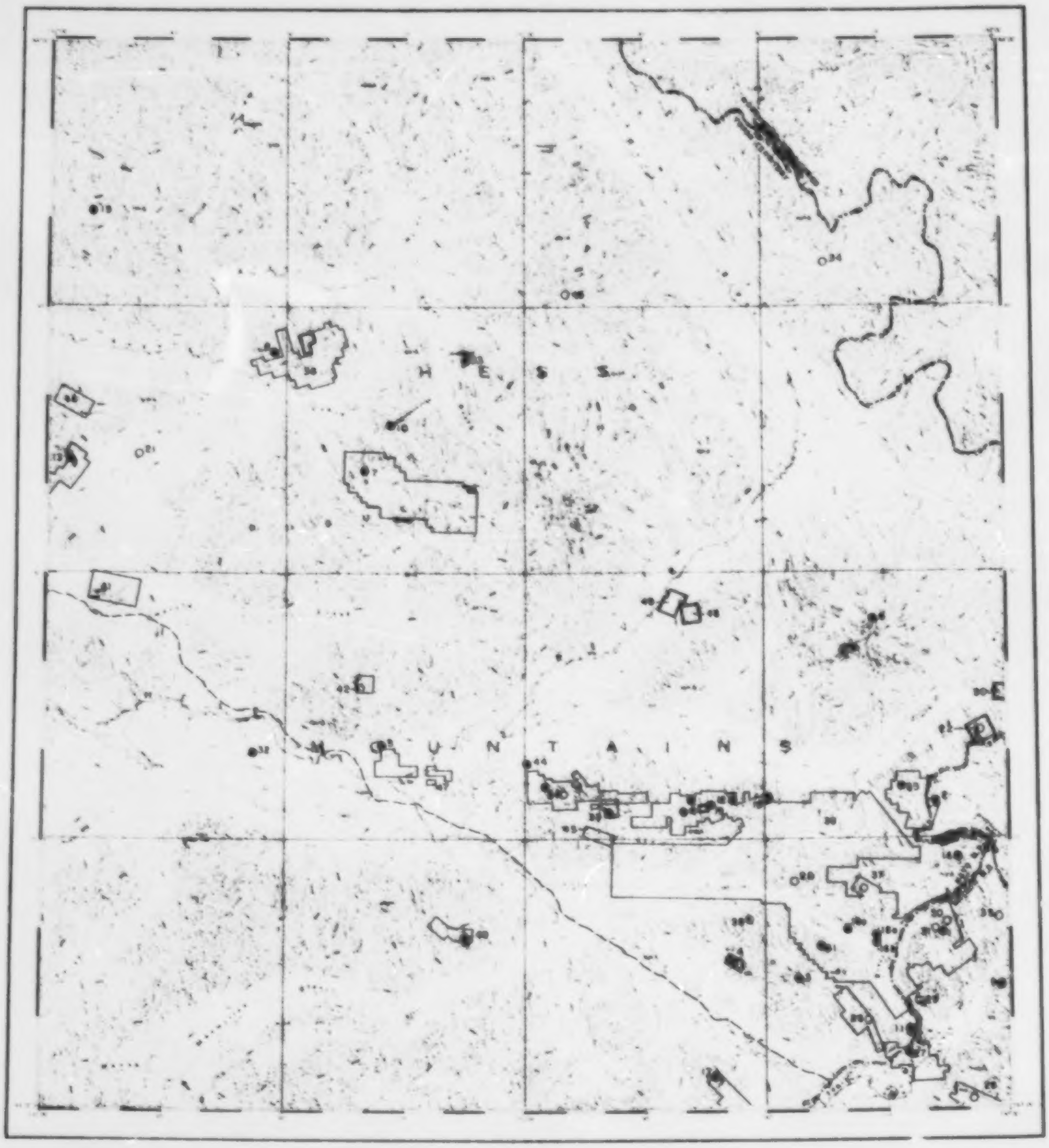
1982 MINERAL CLAIMS STAKED

RAM Noranda Exploration Company Limited	105 N 3 (17) (63°07'N,133°25'W)

Claims 1982: RAM 1-16

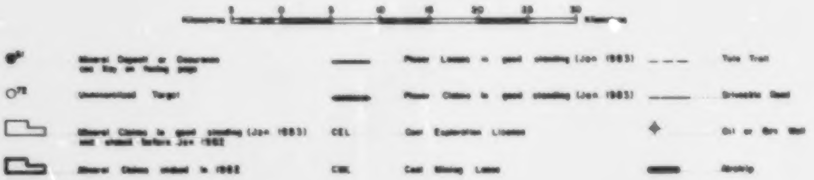
******

105 O


H E S S
M O U N T A I N S

NIDDERY LAKE

YUKON TERRITORY · NORTHWEST TERRITORIES


Kilometres
5
0
5
10
15
20
25
30
Kilometres
Mineral Deposit or Occurrence see list on facing page
Unevaluated Target
Mineral Claims in good standing (Jan 1983) and staked before Jan 1982
Mineral Claims staked in 1982
Placer Leases in good standing (Jan 1983)
Placer Claims in good standing (Jan 1983)
CEL
Coal Exploration Licence
CML
Coal Mining Lease
Tote Trail
Driveable Road
Oil or Gas Well
Airstrip

NIDDERY LAKE MAP-AREA (NTS 105 O)

General Reference: GSC Open File 205 by: S.L. Blusson, 1974.
GSC Open File 765 by: M.P. Cecile, 1981.
GSC Open File 807 by: S.P. Gordey, 1981.

NO.	PROPERTY NAME	REFERENCE
1	TOM	D.I.A.N.D. (1982, p. 174,177)
2	MACTUNG	Morin et al (1977, p. 20-22)
3	JEFF	Garrett (1971, p. 73)
4	ALP	Gold-Silver Vein; This Report
5	SCOT	Craig & Milner (1975, p. 18)
6	KEELE	Garrett (1971, p. 73)
7	EMERALD	This Report
8	HORN	Craig & Milner (1975, p. 17)
9	BEN	Zinc Stratabound
10	ARROWHEAD	Copper Vein
11	RACICOT (MOOSE)	Sinclair et al (1975, p. 21-22); Morin et al (1979, p. 31)
12	HESS	D.I.A.N.D. (1982, p. 174)
13	INCA	Sinclair et al (1975, p. 18)
14	STANDARD	Lead-Zinc-Silver Occurrence
15	ODD	Lead-Zinc Stratabound
16	JASON	This Report
17	BROCK	Barite Stratabound
18	WALT	D.I.A.N.D. (1981,p. 216)
19	TRYALA	Barite Stratabound; This Report
20	NIDD	This Report
21	BOBNOB	D.I.A.N.D. (1981, p. 217)
22	BORD	D.I.A.N.D. (1981, p. 217); This Report
23	BEAUCHAMP	D.I.A.N.D. (1981, p. 217)
24	NEVE	This Report
25	KEN	Sinclair et al (1976, p. 30)
26	PETE	Morin et al (1979, p. 94)
27	MOONLIGHT	Morin et al (1979, p. 32)
28	ESS	Morin et al (1979, p. 32)
29	FETCH	This Report
30	CREE	Morin et al (1979, p. 33)
31	ARGO	Morin et al (1980, p. 9)
32	MV	Morin et al (1980, p. 10)
33	MAC	This Report
34	DUO	D.I.A.N.D. (1982, p. 178)
35	FOG	D.I.A.N.D. (1982, p. 177)
36	OLD CABIN	This Report
37	FUN	This Report
38	FAN	This Report
39	SIM	D.I.A.N.D. (1982, p. 176,177); This Report
40	SUN	This Report
41	EMERA	D.I.A.N.D. (1982, p. 176,177)
42	EMMY	This Report
43	FAL	D.I.A.N.D. (1982, p. 177); This Report
44	BAR	This Report
45	URSA	D.I.A.N.D. (1982, p. 177)
46	ETZEL	This Report
47	ANDY	D.I.A.N.D. (1982, p. 177)
48	NUT	This Report
49	SMOKEY	This Report
50	BBOB	This Report
51	J.K.	This Report

ALP

Hudson Bay Exploration and Development Company Limited
105 O 2 (4)
(63°07'N,130°33'W)

Claims: ROSS 1-8

Current Work and Results:

In 1982, the property was examined by geological mapping. Vugs and stringers of arsenopyrite are associated with altered areas (kaolinite, sericite) in a felsic dyke. Nine small hand trenches were excavated and the dyke channel sampled where exposed.

******

EMERALD

AGIP Canada Limited;
Cominco Limited
Uranium, Copper, Molybdenum, Gold, Tungsten
105 O 11 (7)
(63°34'N,131°16'W)

Reference: D.I.A.N.D. (1982, p.9,12,94,173-174,177).

Claims: FIRE 1,3,9-28; ICE 1-143; SUN 1-139

Source: Summary by K. Grapes from assessment report 091058 by T. Garagan and R. Robertson and assessment reports 091055, 091429, and 091430 by T. Garagan.

History:

The ICE 1-20 claims were staked in 1979 to cover an airborne radiometric anomaly. The FIRE and SUN claims were staked in 1980 and 1981. Geological mapping, prospecting and geochemical sampling were carried out on the FIRE and ICE claims in 1980 and on the FIRE, ICE and SUN claims in 1981. Three trenches were excavated on the ICE claims and one on the FIRE claims.

Description:

The claims cover the Emerald Lake Syenite Intrusion and its contact aureole.

Current Work and Results:

Talus and rock sampling were carried out on the ICE, FIRE and SUN claims in 1982, and two trenches were blasted on the ICE claims.

******

JASON

Ogilvie Joint Venture;
Aberford Resources Ltd.,
Brinco;
Mitex Mining;
Ogilvie Mineral Corp.

Zinc, Lead, Silver
105 O 1 (16)
(63°08' - 63°11'N,
130°20'- 130°27'W)

Reference: D.I.A.N.D. (1982, p.8-9,16,18,20,30,173-177).

Claims: JASON (174 claims and 56 fractions); ACE 1-40; MIKE 1-10

Source: Summary by K. Grapes from assessment report 091422 by G.R. Brown and assessment report 091428 by J.Dumouchel.

Current Work and Results:

An environmental program was initiated in 1980 and continued through 1981 and 1982. Studies of the fishery resources, vegetation, water chemistry, land reclamation techniques and wildlife were conducted on the property. As well as the environmental studies, a drill program was conducted to define the geometry of the mineralized zones and increase the known reserves. Five holes totalling 2,866.64 m were drilled on the South Zone. Four of the holes intersected lead, zinc and silver mineralization. Best values returned were 18.74% Pb, 18.37% Zn and 263.66 g Ag/t over 2 m; 9.83% Pb, 3.84% Zn and 175.89 g Ag/t over 11 m; and 5.71% Pb, 11.47% Zn and 103.54 g Ag/t over 10 m. The South Zone remains open at both ends along strike.

******

NIDD

Cominco Ltd.

Zinc, Lead
105 O 1,2 (20)
(63°12'N,130°30'W)

References: Abbott, J.G. (1982); D.I.A.N.D. (1982, p.8-9,173,175,177).

Claims: NIDD 1-704

Source: Summary by K. Grapes from assessment report 091071 by P.M. Scott, assessment report 091365 by D.R. Rhodes and assessment report 091421 by M.R. Murrell.

Current Work and Results:

In 1982 Cominco conducted a program of line-cutting, geochemical sampling, geological mapping on scales of 1:5,000 and 1:10,000, trenching, diamond drilling, road building and geophysical surveying.

A total of 204 soil samples were collected on claims 521-574, 619-620 and 625-630 (underlain by the Road River Formation) and analyzed for Pb, Zn and Ba.

One thousand two hundred and forty-two (1,242) metres of HQ and NQ diamond drilling were completed in four holes across the NIDD 84, 91 and 316 claims.

******

NEVE

AGIP Canada Limited

Arsenic, Antimony
105 O 7 (24)
(63°17'N,130°55'W)

Reference: D.I.A.N.D. (1982, p.173,175,177).

Claims: NEVE 1-35; BRICK 1-40

Source: Summary by K. Grapes from assessment reports 091056, 091388 and 091389 by T. Garagan.

History:

In 1981 the BRICK 1-40 and NEVE 1-35 claims were staked, mapped on a scale of 1:10,000 and stream sediment, soil and rock chip sampled.

Description:

The claims are located approximately 35 km south of Emerald Lake and 50 km west of Macmillan Pass. Quartz-realgar-stibnite veinlets cut minor acid sills.

Current Work and Results:

Additional mapping and sampling and a magnetometer survey were carried out in 1982.

******

FETCH

Cominco Limited

105 O 1 (29)
(63°06'N,130°12'W)

Reference: Morin et al (1980, p.8)

Claims: HASTEN; FETCH; BASIN (85 claims)

Current Work and Results:

All claims were mapped at 1:5,000 scale in 1982 and soil samples were collected over part of the property. Mapping indicated that the favourable horizon may extend onto these claims from JASON. A small Pb soil anomaly was delineated.

******

MAC
Hudson Bay Exploration and
Development Company Limited

Barite Stratabound
105 O 7 (33)
(63°17'N,130°55'W)

Reference: D.I.A.N.D. (1982, p.173,175,177).

Claims: MAC (63)

Source: Summary by K. Grapes from assessment report 091075 by R. Stroshein and assessment report 091373 by G. Fraser.

Current Work and Results:

During the 1982 field season, geological mapping, soil and rock geochemical sampling (claims 124-135, 137, 139, 145-146) and a magnetometer survey (claims 101-104) were carried out on the property.

The geochemical sampling was directed at exploration along the contact between Early-Middle Devonian chert and cherty argillite - Middle to Upper Devonian shale and siltstone. Twenty-three rock samples were collected from the chert and cherty argillite unit and analyzed for Cu, Pb, Au, Ag and Ba. The results indicate anomalous lead values near the chert-shale contact, anomalous zinc values from near Road River Formation units and anomalous copper values above the Road River Formation. Barium results were low.

Five occurrences of barite outcrop on the property. Barite occurs as massive, grey, cherty barite or interlaminated, grey, crystalline barite with black platy argillite. The largest occurrence has a strike length of 150 m and a thickness of 50 m. The bodies occur in finely laminated carbonaceous argillite of the Lower Earn Group.

A limited magnetometer survey was conducted to locate possible "feeder" zones. There was no significant magnetic response in the vicinity of the bedded barite, suggesting that the pyrrhotite feeder zone type mineralization occurring on the TOM property does not occur associated with the barite occurrences on the MAC claims.

******

OLD CABIN
Union Carbide Canada
Limited

Gold, Molybdenum
105 O 11, 12 (36)
(63°42'N,131°30'W)

Reference: D.I.A.N.D. (1982, p.173,176,178).

Claims: OLD 1-62; CABIN 1-137

Source: Summary by K. Grapes from assessment reports 091076 and 091404 by D.H. James.

Current Work and Results:

In 1982, the OLD and CABIN claims were mapped on a scale of 1:10,000 and 14 additional claims were staked to cover favourable ground.

The claims are underlain by a Proterozoic and/or lower Paleozoic sequence of sedimentary and volcanic rocks. The sedimentary rocks are fine-grained clastics and cherts. The volcanic rocks are mafic flows, tuffs, breccias and agglomerates. During the early mid-Cretaceous, the sequence was tightly folded into north-west and easterly trending synclines and anticlines. Mid-Cretaceous quartz diorite and granodiorite stocks and plutons have intruded along a north-west trend. The granodiorite stock and the sedimentary rocks are displaced by north and north-westerly striking faults. Gold-bearing arsenopyrite veins were found at six localities. Samples from the veins assayed up to 22.42 g Au/t. The veins intersect fine grained clastic sedimentary rocks with interbedded chert and minor mafic volcanics. Associated vein sulphides are pyrite and interstitial argentiferous galena and chalcopyrite. Veins cross-cutting the sedimentary rocks or occupying the faults tend to be continuous along strike, and range between 1 cm and 15 cm in width. Veins intruding mafic and intermediate volcanics are smaller, more erratically distributed and numerous. Molybdenite-bearing quartz veins cut the granodiorite stock.

******

FUN
Amax of Canada
Limited

Geochemical Target
105 O 1 (37)
(63°15'N,130°20'W)

References: Abbott, J.G. (1982); D.I.A.N.D. (1982, p. 173,176-177).

Claims: FUN 1-25

Source: Summary by K. Grapes from assessment report 091376 by F.R. Harris and N. Humphreys.

Current Work and Research:

In 1982 Amax collected 218 soil samples and four stream sediment samples on the FUN claims. All samples were analyzed for Pb, Zn, Cu, Ag, Ba, Fe and Mn.

Two zones anomalous in Pb (100 ppm - 200 ppm Pb), three zones anomalous in Zn (up to 2,300 ppm Zn), three zones anomalous in Cu (up to 600 ppm Cu) and a large Ag anomalous zone with values up to 5.4 ppm Ag, were delineated. The anomalous zones are parallel to the underlying sedimentary strata but have not been related to any known mineralization. One Cu-Zn soil anomaly occurs over a narrow zone of pyrite in graphitic shale.

******

FAN Geochemical Target
Amax of Canada Limited 105 O 1,2,7,8 (38)
(63°15'N,130°20'W)

Reference: D.I.A.N.D. (1982, p.8-9, 173,176-177).

Claims: FAN (460)

Source: Summary by K. Grapes from assessment reports 091012 and 091395 by F.R. Harris.

History:

The FAN claims were staked, mapped on a 1:20,000 scale and geochemically sampled in 1981.

Description:

The claims are located in the Macmillan Pass area five km northwest of the North Canol Road. The property lies within an easterly trending graben near the northeastern margin of Selwyn Basin. The claims are underlain by Cambrian to Devonian shale, siltstone, chert and limestone and Devono-Mississippian flysch and minor volcanic breccia. All strata are cut by easterly-striking felsic dykes up to 50 m wide. Tight folds occur throughout the property with thrust faults in the northern part.

Current Work and Results:

A total of 1,247 soil samples were collected on two grids in 1982. The samples were analyzed for Cu, Mn, Fe, Ag, Pb, Zn and Ba.

On the South grid, Pb (greater than 58 ppm Pb), Ba (greater than 5,000 ppm Ba) and Ag (greater than 2 ppm Ag) soil anomalies are underlain by Hadrynian phyllite. Copper anomalies (greater than 144 ppm Cu) are associated with a pyritic volcanic breccia at the base of the Earn Group.

On the North grid, Pb, Zn (greater than 1,000 ppm Zn), Ba and Ag soil anomalies are underlain by either the basal baritic unit of the Earn Group or Road River Formation fine grained clastic rock. Copper soil anomalies appear to be randomly distributed over Lower Earn Group and Road River Formation stratigraphy.

******

SIM
Hudson Bay Exploration and 105 O 2 (39)
Development Company Limited (63°10'N,130°32'W)

Claims: SIM 1-8

Current Work and Results:

In 1982, grid soil and stream sediment sampling and mapping programs were carried out. The claims cover the contact between a Cretaceous pluton and Mississippian siltstone, sandstone and shale.

******

SUN Geochemical Target
Hudson Bay Exploration and 105 O 3 (40)
Development Company Limited (63°10'N,131°07'W)

Reference: D.I.A.N.D. (1982, p. 173,176-177).

Claims: SUN (30)

Source: Summary by K. Grapes from assessment report 091367 by G. Fraser.

Current Work and Results:

In 1982, work on the claims consisted of soil, stream sediment and rock geochemical sampling, along with geological mapping.

One hundred and fourteen soil samples were collected from the northwest section of the claim block and analyzed for Cu, Pb, Au and Ag. Forty-two silt samples were collected and assayed for Pb, Zn, and Ag. Results show several significant anomalies in which lead and zinc appear to be associated.

Analyses of thirteen rock samples for Cu, Pb, Zn and Ag did not delineate any trends.

Geological mapping indicates that the property can be divided into three lithologic packages. The oldest group is comprised of sedimentary units of the Road River Formation. This is overlain by clastic rocks of the Lower Earn Group and Carboniferous shale, siltstone, sandstone and limestone. A Cretaceous granodiorite plug has intruded to the north of the claims, producing a distinctive rusty weathering aureole in the sedimentary rocks on the property.

******

EMMY Silver, Gold, Lead
Union Carbide Exploration 105 O 6 (42)
Corporation (63°21'N,131°20'W)

References: Abbott, J.G. (1982); D.I.A.N.D. (1982, p.173,177).

Claims: EMMY 1-16

Source: Summary by K. Grapes from assessment report 091377 by D.H. James.

History:

During the years 1971-1976, several exploration programs were conducted in the Niddery Lake area. At that time stream concentrates were analyzed for WO_3 and Cu. The samples were re-analyzed for gold, silver, molybdenum, and arsenic in 1981. A number of anomalous areas were delineated and followed up with further prospecting, and stream sediment geochemistry. The 16 EMMY claims were staked in 1981 to cover a gold-arsenic anomaly.

Description:

The claims are situated approximately 12 km north of Niddery Lake, 67 km west of Macmillan Pass.

Current Work and Results:

The primary purpose of the 1982 program was to map the property at 1:10,000 scale.

A quartz monzonite pluton outcrops in the northwest corner of the property. In the southwestern portion of the claim block, black and white banded chert and quartzite occur. A black breccia unit is associated with faulting in this area. The breccia is made up of brecciated quartzite, crushed chert, gossan quartz, sheared black shales and black clay gouge transected by quartz veins. The southern portion of the claims are underlain by brown to rusty weathering, fine grained, light hornfels increasing in darkness towards the north. In the north the hornfels are in fault contact with black shale. The shale grades into interbedded black shale and brown argillite bands which grade into chert, argillite, minor siliceous black shale and rare white pyritic marble. Quartz veining and stockwork occur within the black breccias, the altered cataclastic zones adjacent to the major fault and smaller subsidiary faults and associated with altered felsic dykes. Epithermal vein characteristics are present, including: banded ribbon quartz, cockscomb textures, small vugs lined with drusy quartz and irregular white to grey chalcedonic patches. Brecciated hornfels fragments are caught up in the vein. Visible sulphides include pyrite and arsenopyrite. This vein yielded a gold assay of 3,400 ppb Au. Geochemical analysis indicates that argentiferous galena, stibnite and bismuthinite may occur in some of the veins. Altered hornfels in the cataclastic zone adjacent to the major fault returned above background values of gold with a maximum of 660 ppb Au. Black breccia with small argentiferous galena concentrations returned values of 3.7% Pb and 948 g Ag/t.

******

FAL
Hudson Bay Exploration and Development Company Limited

Unmineralized Target
105 O 7 (43)
(63°15'N,130°15'W)

Claims: FAL (14)

Current Work and Results:

The claims were staked to cover favourable, early-mid Devonian chert, cherty argillite and volcanic rocks and younger Devonian shales. These rocks contain several gossans and a siderite showing. In 1982, grid mapping, soil and rock geochemistry surveys were conducted.

******

BAR
Hudson Bay Exploration and Development Company Limited

Barite
105 O 7 (44)
(63°19'N,130°57'W)

References: Abbott, J.G. (1982); D.I.A.N.D. (1982, p.173,177).

Claims: BAR 1-30

Source: Summary by K. Grapes from assessment report 091375 by G. Fraser.

History:

The BAR claims were staked in 1981 to cover bedded barite showings in favourable Devonian stratigraphy.

Description:

The claims are situated approximately 42 km northwest of the Macmillan Pass airstrip, 224 km northeast of Ross River. The property is located near the North and Central Blocks of the Macmillan Fold Belt (Abbott, 1982). The North Block represents thrusted sheets of Cambro-Ordovician and older units, overriding highly folded Devonian stratigraphy of the Central Block.

Barite showings occur at the contact of Middle to Upper Devonian, dark blue chert and brown weathering, thinly laminated shale and siltstone of the Missippian Upper Earn Group. The barite beds are dark grey to black and well bedded, commonly with shale laminae.

Current Work and Results:

In 1982, work on the property consisted of soil and rock geochemical sampling, geological mapping and hand trenching. One hundred and one soil samples, 12 rock samples and 11 channel samples collected across the two trenches, were analyzed for Cu, Pb, Zn, Ag and Ba. Several anomalous values of each element occur near the blue chert-shale and siltstone contact, and particularily near the exposed barite beds. However the values are not consistent.

******

ETZEL
Union Carbide Exploration Corporation

Lead,Zinc,Antimony Veins
105 O 12 (46)
(63°39'N,131°55'W)

Reference: D.I.A.N.D. (1982, p.171,173,178).

Claims: ETZEL 1-32

Source: Summary by K. Grapes from assessment report 091378 by D.H. James.

History:

The ETZEL claims were staked in 1981 to cover mineralized quartz veins and an area of mineralized float.

Description:

The property is located seven km south of the Rogue River and 105 km to the northwest of Macmillan Pass. The claims straddle the contact between the "Grit Unit" of Hadrynian to Cambrian age and sedimentary rocks of Ordovician to Mississippian age.

Current Work and Results:

The property was mapped on a scale of 1:20,000 in 1982.

The "Grit Unit" occupies the northern half of the claim block. It consists of maroon and green shale interbedded with minor brown weathering shale, grading upwards into shale interbedded with argillite and thinly bedded fine-grained sandstone. The unit is capped by orange or grey weathering limestone beds in fault contact with overlying Early to Mid-Devonian sedimentary rocks. To the south, the Mid-Devonian sedimentary rocks are underlain by grey phyllite. Silurian intermediate volcanic flows outcrop in the southeast, and thin to the north and east.

The ridge forming the southwestern property boundary comprises a very thick sequence of massive bedded chert pebble conglomerate, Middle to Late Devonian in age, which is underlain by a sequence of thin-bedded black and white chert, cherty argillite, chert conglomerate and black siliceous shale. A mid-Cretaceous granodiorite intrudes the package in the south central portion of the claims. Quartz veins are largely confined to the granodiorite. The earliest veins occupy a regularly oriented vertical and horizontal joint system probably related to cooling and shrinkage of the pluton subsequent to emplacement. These veins are cut by a later generation of quartz veining with associated hydrothermal alteration. Minor chalcopyrite was noted in some veins and pyrite-arsenopyrite-(stibnite) mineralization is associated with south dipping quartz veins. Sulphides preferentially concentrate along the vein margin. Small pockets of disseminated mineralization occur at the intersection of the veins. One banded vein about 7 cm wide contains visible sulphides which include pyrite, arsenopyrite, galena, fine-grained stibnite and yellow-brown sphalerite.

******

BBOB
AGIP Canada Limited 105 O 8 (50)
(63°23'N,130°00'W)

Claims: BBOB 1-9

Current Work and Results:

The claims were staked to cover a gossan. In 1982, the claims were mapped at 1:31,000 scale and silt and soil sampled. Two small hand trenches were also excavated.

******

J.K. Barite
Aberford Resources 105 O 1 (51)
Ltd. (63°09'N,130°23'W)

Reference: D.I.A.N.D. (1982, p.173-175,177).

Claims: J.K. 1-160

Source: Summary by K. Grapes from assessment report
091409 by J.D. Kapusta.

History:

The J.K. claims were staked in 1981 to cover a newly discovered bedded barite occurrence.

Description:

The claims are located nine km northwest of the Canol Road at Macmillan Pass, adjoining the JASON claims to the west.

Current Work and Results:

In 1982 work on the property consisted of soil and rock chip sampling, hand trenching, prospecting and geological mapping.

A total of 395 soil (humus, A, B, C horizon) samples were collected and analyzed for Pb, Ag, Zn and Ba. High Ba anomalies (greater than 20,000 ppm) indicate extension of the barite occurrence to the northwest and southeast. High Zn anomalies (greater than 150 ppm) occur in areas underlain by Road River Formation.

Rock chip samples were collected from sections through the Road River Formation and the Upper Earn Group to determine whether there is a geochemical signature for each lithologic unit. The Road River Formation is high in zinc while the Upper Earn Group contains low, erratic values of zinc and a consistent lead, silver median.

Four one metre deep trenches were blasted to determine the depth of the weathered zone over the barite horizon, and the thickness of ferricrete cover in the valley bottom. The weathering zone and ferricrete thickness exceed one meter in depth.

Mineralization on the claims consists of laminated and nodular baritic sedimentary rock in the Lower Earn Group, associated with accumulations of lead, zinc and silver.

******

1982 MINERAL CLAIMS STAKED

ALP 105 O 2 (4)
Hudson Bay Exploration and (63 08'N,130 33'W)
Development Company Limited

Claims 1982: ROSS 1-8

TRYALA 105 0 7 (19)
T. Jenkins (63 16'N,130 37'W)

Claims 1982: KAM 3-6

NUT 105 0 7 (48)
Amax Of Canada Limited (63 27'N,130 39'W)

Claims 1982: NUT 1-16

SMOKEY 105 0 7 (49)
(63 28'N,130 42'W)

Claims 1982: SMOKEY 1-16; PETER 1-4; HAZEL 1-4

BORD 105 0 8 (22)
SEREM Ltd. (63 21'N,130 01'W)

Claims 1982: WALL 1-24

BBOB 105 0 8 (50)
AGIP Canada Limited (63 23'N,130 00'W)

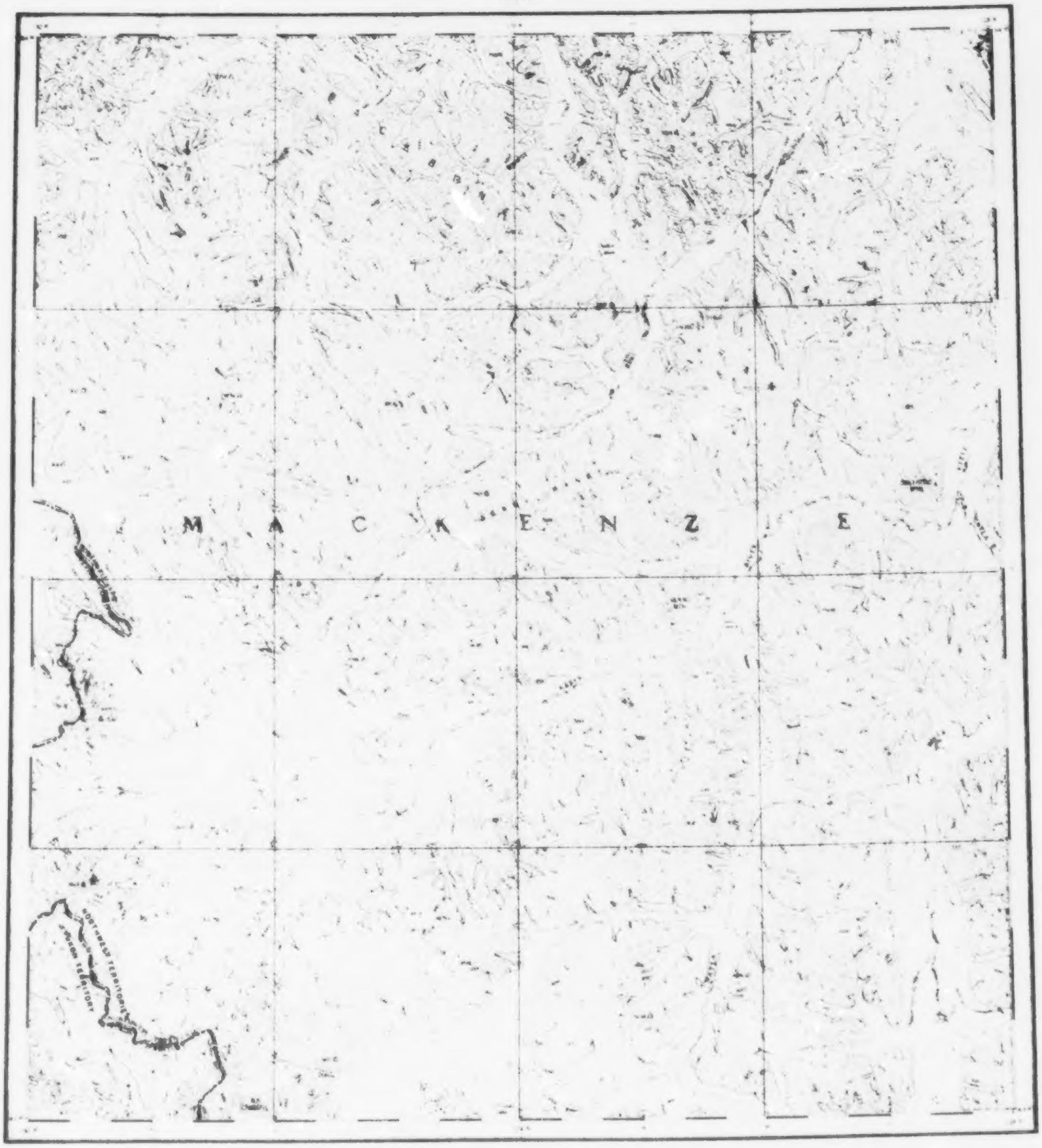
Claims 1982: BBOB 1-8

OLD CABIN 105 0 11 (36)
Union Carbide Canada Limited (63 42'N,131 30'W)

Claims 1982: CABIN 124-137

******

105P


M A C K E N Z I E
NORTHWEST TERRITORIES
YUKON TERRITORY

SEKWI MOUNTAIN

NORTHWEST TERRITORIES – YUKON TERRITORY

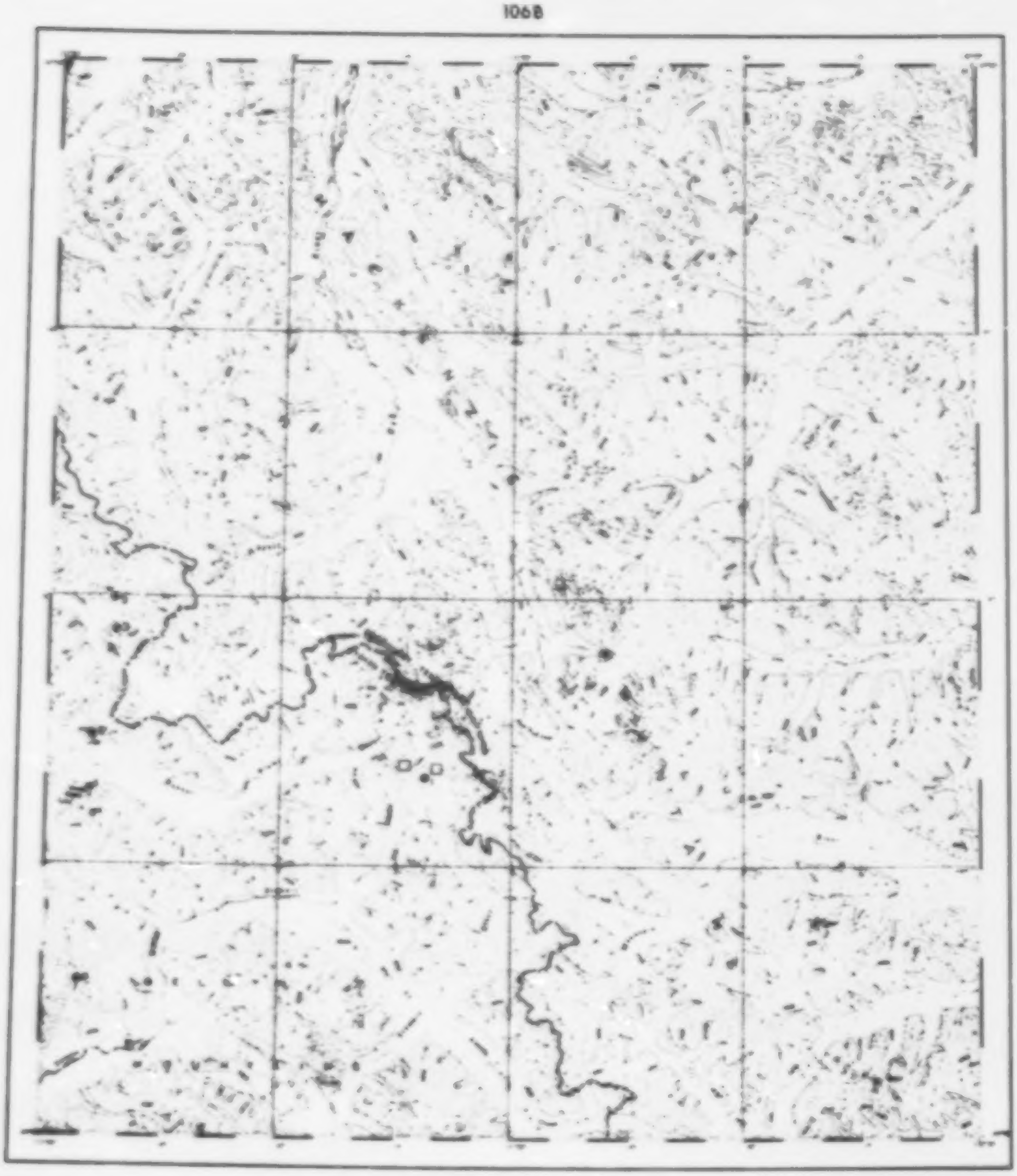
Kilometres 5 0 5 10 15 20 25 30 Kilometres
Mineral Deposit or Occurrence see Key on facing page
Unmineralized Target
Mineral Claims in good standing (Jan 1983) and staked before Jan 1982
Mineral Claims staked in 1982
Placer Leases in good standing (Jan 1983)
Placer Claims in good standing (Jan 1983)
CEL Coal Exploration License
CML Coal Mining Lease
Tote Trail
Driveable Road
Oil or Gas Well
Airstrip

SEKWI MOUNTAIN MAP-AREA (NTS 105 P)

General Reference:	GSC Paper 71-22 by: S.L. Blusson, 1971. GSC Open File 710 by: M.P. Cecile, 1980. GSC Open File 807 by: S.P. Gordey, 1981.

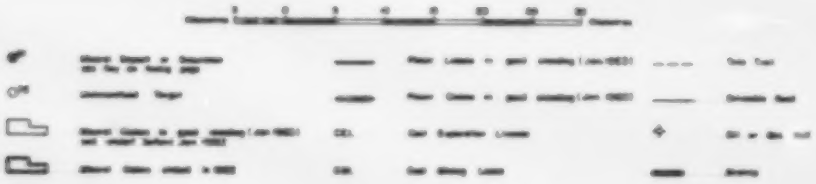
NO.	PROPERTY NAME	REFERENCE
1	MEHITABEL	Skarn Copper-Tungsten-Molybdenum

106 B



BONNET PLUME LAKE

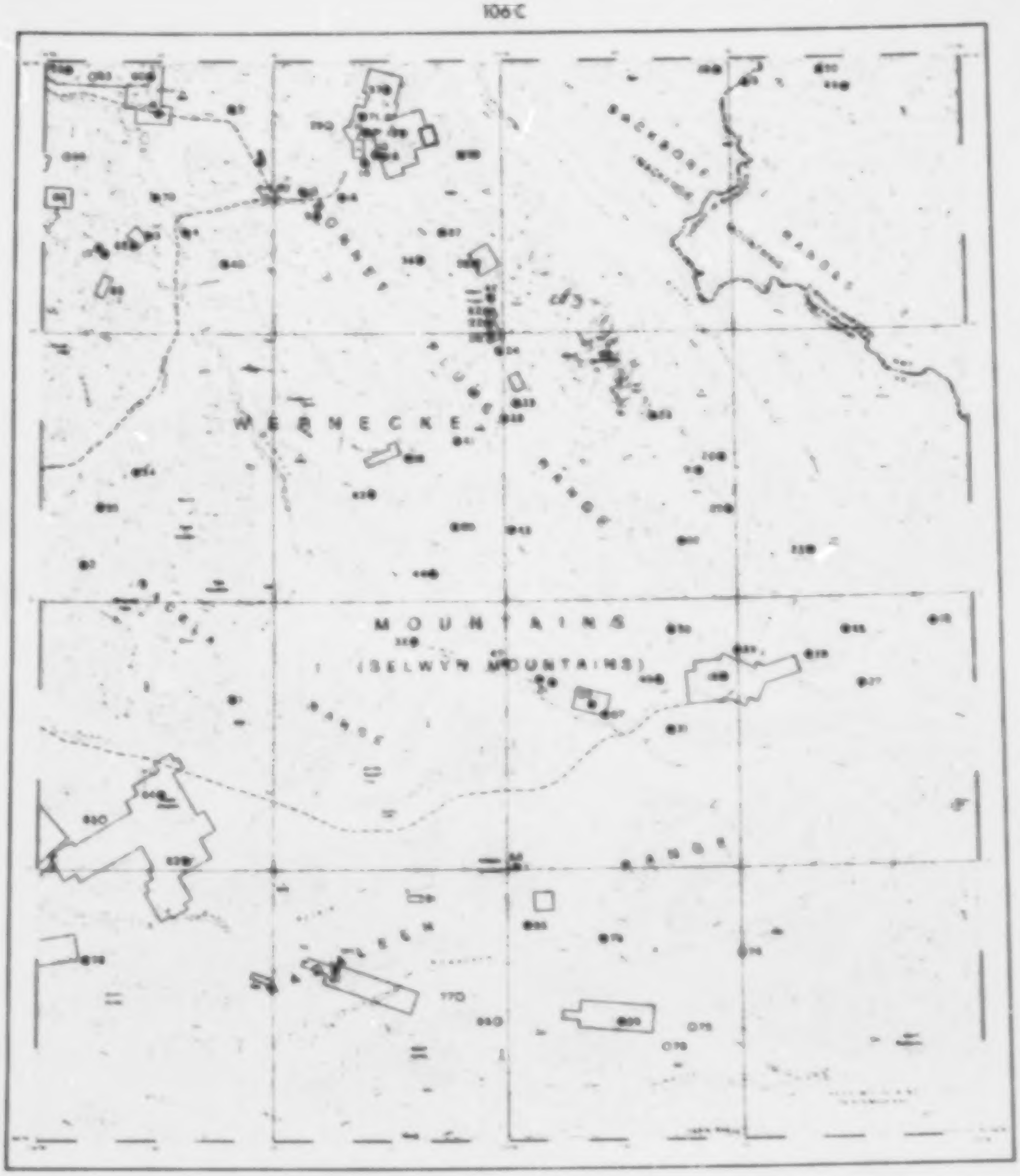
YUKON – NORTHWEST TERRITORIES



BONNET PLUME MAP-AREA (NTS 106 B)

General Reference: GSC Open File 205 by: S.L. Blusson, 1974.
GSC Open File 710 by: M.P. Cecile, 1980.

NO.	PROPERTY NAME	REFERENCE
1	ECONOMIC	Sinclair et al (1975, p. 19)
2	ANDY	Dawson (1975, p. 240-241)
3	NECO	Zinc-Lead Vein
4	BIRKELAND	Lead-Zinc
5	PR	Morin et al (1977, p. 118)


106C
WERNECKE
MOUNTAINS
(SELWYN MOUNTAINS)
BACKBONE
RANGES
RANGE

NADALEEN RIVER

YUKON TERRITORY NORTHWEST TERRITORIES

NADALEEN RIVER MAP-AREA (NTS 106 C)

General Reference: GSC Open File 205, 206 by: S.L. Blusson, 1974.
GSC Open File 710 by: M.P. Cecile, 1980.

NO.	PROPERTY NAME	REFERENCE
1	KOHSE	Copper Occurrence
2	SALUTATION	Copper-Cobalt Occurrence
3	GILLESPIE	Lead-Zinc Vein
4	GEORDIE	Lead-Zinc-Silver Occurrence
5	GILDERSLEEVE	Dawson (1975, p. 241)
6	FAIRCHILD	This Report
7	BIBBER	Copper Vein
8	DOLORES	Copper-Silver-Cobalt Vein
9	KEY MOUNTAIN	D.I.A.N.D. (1982, p. 185-186)
10	MAMMOTH	Findlay (1969b, p. 16-17)
11	CIRQUE	Copper-Cobalt-Silver Vein
12	PORPHYRY	Findlay (1969b, p. 16-17)
13	TETRAHEDRITE CREEK	This Report
14	AIRSTRIP	Copper
15	VULCAN	D.I.A.N.D. (1982, p. 186)
16	DOBBY	Copper Occurrence
17	KIDNEY	Copper Vein
18	PING (CORN CREEK)	Sinclair *et al* (1975, p. 53-54)
19	GOZ CREEK	Sinclair *et al* (1975, p. 23-24)
20	HARRISON	Sinclair *et al* (1975, p. 41-42)
21	MUELLER	Sinclair *et al* (1975, p. 42-43)
22	CORN CREEK (COB)	Sinclair & Gilbert (1975, p. 26)
23	ZOG	Zinc Occurrence
24	GOODMAN (AL)	Sinclair *et al* (1975, p. 64-65)
25	NEST	Sinclair *et al* (1975, p. 33-35)
26	TOPOROWSKI	Zinc-Lead Stratabound
27	ANGLO	Sinclair *et al* (1975, p. 38,40)
28	GUS	Sinclair *et al* (1975, p. 36)
29	GENTRY	Sinclair *et al* (1975, p. 24-28)
30	CADET	Sinclair *et al* (1975, p. 29,46)
31	LOG	
32	MOUSE	Sinclair *et al* (1975, p. 40-41, 49-50)
33	FRIGSTAD (STAR)	Sinclair *et al* (1975, p. 55-56)
34	SPECTROAIR(DEA)	Sinclair *et al* (1975, p. 58-59)
35	PROFEIT	D.I.A.N.D. (1982, p. 186,190)
36	POO	Lead-Zinc Vein
37	CARNE (EG)	Sinclair *et al* (1975, p. 61-62)
38	DAN	Sinclair *et al* (1975, p. 61)
39	DOWSER (MAC)	Sinclair *et al* (1975, p. 63)
40	LEARY	Zinc-Lead-Copper Vein
41	CANWEX (WX)	Sinclair *et al* (1975, p. 56-57)
42	COAST (SUN)	Sinclair *et al* (1975, p. 60)
43	BOB	Lead-Zinc Occurrence
44	BRENDON (RAM)	Sinclair *et al* (1975, p. 51)
45	GAL	Sinclair *et al* (1975, p. 30-31)
46	ENVOY (RUM)	Sinclair *et al* (1975, p. 37,39)
47	TAPIN	
48	CAB	Morin *et al* (1979, p. 41)
49	BAK	Zinc-Lead Stratabound
50	MOGUL	Sinclair *et al* (1975, p. 66)
51	DUNE	Zinc-Lead Vein
52	SNAKE	Lead-Zinc Stratabound
53	McKELVIE	Zinc-Lead-Barium Vein
54	MARSHALL	Copper Occurrence
55	ALGAE	Copper Occurrence
56	LEAH	D.I.A.N.D. (1981, p. 224)
57	RAM	D.I.A.N.D. (1981, p. 224)
58	LFY	D.I.A.N.D. (1981, p. 235)
59	SIAN	D.I.A.N.D. (1981, p. 224)
60	OTTER	D.I.A.N.D. (1982, p. 186-187)
61	CRAIG	D.I.A.N.D. (1981, p. 225-230)
62	TOW	D.I.A.N.D. (1981, p. 231)
63	VAL	D.I.A.N.D. (1982, p. 187)
64	VERA	D.I.A.N.D. (1982, p. 187)
65	ELGEA	D.I.A.N.D. (1982, p. 187-188)
66	TARA (NADALEEN)	D.I.A.N.D. (1982, p. 188,190)
67	FUN	Sinclair *et al* (1976, p. 41)
68	DF	Sinclair *et al* (1976, p. 50)
69	MID	Sinclair *et al* (1976,p. 51)
70	ALE	Sinclair *et al* (1976, p. 56)
71	PTERO	D.I.A.N.D. (1982, p. 188)
72	REP	Morin *et al* (1979, p. 39)
73	BROMADROSIS	Morin *et al* (1977, p. 122)
74	EIRA	Morin *et al* (1979, p. 35)
75	BLACK IDA	Morin *et al* (1979, p. 35)
76	JAM	Morin *et al* (1979, p. 36)
77	STAR	Morin *et al* (1979, p. 36)
78	COOKER	Morin *et al* (1980, p. 37)
79	GLEN	Morin *et al* (1980, p. 10)
80	BONNET	D.I.A.N.D. (1982, p. 190)
81	STRIP	D.I.A.N.D. (1982, p. 190)
82	RAFE	D.I.A.N.D. (1982, p. 190)
83	JOLLY	This Report
84	APE	This Report
85	DJ	Sinclair *et al* (1975, p. 52)

FAIRCHILD
Energex Minerals
Limited

Uranium, Copper
Breccia
106 C 13 (6)
(64°57'N,133°45'W)

References: D.I.A.N.D. (1981,p.223); Morin *et al* (1980, p.11-12).

Claims: FAIR (33)

Source: Summary by K. Grapes from assessment report 091026 by K.V. Campbell and C.K. Ikona.

Current Work and Results:

In the fall of 1981, a program of geological mapping, geochemical soil and rock chip sampling, and detailed rock sampling of mineralized areas and representative outcrops was carried out on the ground northeast of Fairchild Creek. The results were combined with terrain analysis and geochemical gradient analysis to outline copper mineralization and estimate the range of copper values in the area.

On the east side of Fairchild Creek, basic hornfels underlies clastic rock of the Proterozoic Fairchild Lake Group. The thin bedded, laminated strata strike east-west and dip moderately to the north. Faults trend northeast with near vertical dips and are commonly mineralized with copper. Widespread chalcopyrite and malachite mineralization occurs in basic hornfels, calc-silicate hornfels and calcareous metasedimentary rocks. Chalcopyrite occurs as fine grained disseminations, blebs and fine stringers.

Chip samples over 13 m across copper mineralized fractures in the basic hornfels averaged 0.38% Cu. Rock samples of calc-silicate hornfels averaged 0.29% Cu and calcareous metasedimentary rocks overlying basic hornfels averaged 0.61% Cu.

Two soil anomalies were delineated on the northeast side of Fairchild Creek, one of which is located on a major northerly trending fault.

******

JOLLY — Lead, Zinc Vein
Wernecke Joint Venture; — 106 C 13 (83)
Archer, Cathro and — (64°48'N,133°54'W)
Associates (1981) Limited

Reference: D.I.A.N.D. (1982, p.185,189-190).

Claims: JOLLY 1-10

Source: Summary by K. Grapes from assessment report 091442 by W.D. Eaton.

Current Work and Results:

Geological mapping, hand trenching and airphoto interpretation were conducted on the claims in 1982.

Fracture-filling mineralization containing varying amounts of galena and sphalerite, abundant pyrite and trace chalcopyrite occurs in the area.

Soil anomalies support stream sediment geochemical results with values of up to 870 ppm Pb, 2,60 ppm Zn and 225 ppm Cu.

******

APE — Copper, Uranium,
Wernecke Joint Venture; — Cobalt, Molybdenu
Archer, Cathro and — 106 C 13 (8
Associates (1981) Limited — (64°52'N,133°58'

Reference: D.I.A.N.D. (1982, p.185,189-190).

Claims: APE 1-24

Source: Summary by K. Grapes from assessment report 091444 by W.D. Eaton.

Current Work and Results:

The northern extension of the U, Mo bearin shear zone in the central claims was prospected a rock and soil sampled in detail.

******

1982 MINERAL CLAIMS STAKED

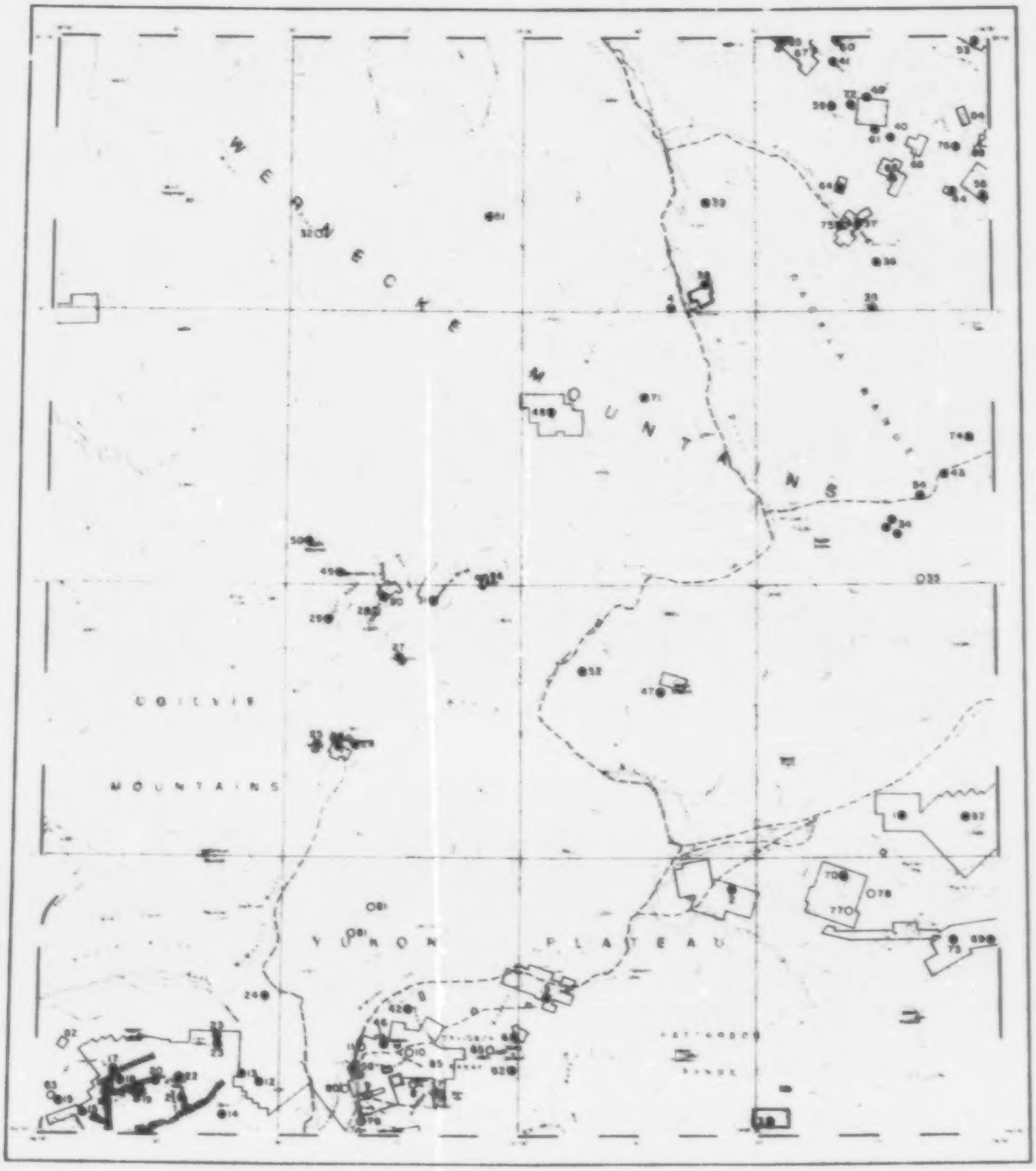
TETRAHEDRITE CREEK — 106 C 14 (1
Texaco Resources Canada — (64°53' - 64°53'
Limited — 133°13' -133°30'

Claims 1982: IOTA 113-128

******

NOTES

106D


WERNECKE MOUNTAINS
OGILVIE MOUNTAINS
YUKON PLATEAU

NASH CREEK
YUKON TERRITORY

Kilometres 5 0 5 10 15 20 25 30 Kilometres

●	Mineral Deposit or Occurrence see Key on facing page	▬	Placer Leases in good standing (Jan 1983)	- - -	Tote Trail
○	Unconventional Target	▬	Placer Claims in good standing (Jan 1983)	—	Drivable Road
	Mineral Claims in good standing (Jan 1983) and staked before Jan 1982	CEL	Coal Exploration Licence	◊	Oil or Gas Well
	Mineral Claims staked in 1982	CML	Coal Mining Lease	▬	Airstrip

NASH CREEK MAP-AREA (NTS 106 D)

General Reference: GSC Map 1282A and Memoir 364 by: L.H. Green, 1972.
GSC Open File 710 by: M.P. Cecile, 1980.

NO.	PROPERTY NAME	REFERENCE
1	KATHLEEN	D.I.A.N.D. (1982, p. 194)
2	NOW	D.I.A.N.D. (1981, p. 238)
3	MARG	Lead-Zinc-Silver-Copper Stratabound; This Report
4	WEN	Green (1972, p. 139)
5	CLARK	Sinclair & Gilbert (1972, p. 15-16); Craig & Laporte (1972, p. 19-20)
6	CAMERON (PAUL)	Green (1971, p. 63-64); Sinclair et al (1975, p. 16-17)
7	STAND-TO	Findlay (1969b, p. 13-14); D.I.A.N.D. (1982, p. 198)
8	FORBES	Cockfield (1922)
9	SPRING (HL)	Craig & Milner (1975, p. 30); D.I.A.N.D. (1982, p. 198)
10	RAMBLER	Cockfield (1922, p. 4-5); Green (1971, p. 63); D.I.A.N.D. (1981, p. 244)
11	RUSTY	
12	ERIN	Craig & Laporte (1972, p.16-17)
13	GWAIHIR	D.I.A.N.D. (1981, p. 238)
14	SKATE	D.I.A.N.D. (1982, p. 194)
15	PESO (REX)	Green (1965, p. 20-22); D.I.A.N.D. (1981, p. 244)
16	BARKER	Boyle (1965, p. 84)
17	MEILECKE	Silver-Lead Vein
18	SHEPPARD	Mulligan (1975, p. 73-74)
19	DUBLIN GULCH	This Report
20	POTATO HILLS	Little (1959, p. 21-29,34-36); Craig & Milner (1975, p. 24-25)
21	RAY GULCH	D.I.A.N.D. (1981, p. 240)
22	ELLIS	Green & Godwin (1963, p. 15)
23	LYNX	Green & Godwin (1963, p. 15); D.I.A.N.D. (1981, p. 244)
24	LUCKY STRIKE	Green (1972, p. 137); D.I.A.N.D. (1982, p. 198)
25	WHITE HILL	Cockfield (1925, p. 1-18)
26	McKAY HILL	Cockfield (1924, p. 22-28); Green (1972, p. 133-134); D.I.A.N.D. (1981, p. 244)
27	GREY COPPER HILL	D.I.A.N.D. (1981, p. 240)
28	CARPENTER	Cockfield (1925, p. 1-18)
29	ELLIOTT RIDGE	Cockfield (1925, p. 1-18)
30	SILVER HILL	Cockfield (1925, p. 1-18); Green (1972, p. 133)
31	SETTLEMEIR	
32	ROYAL	
33	ZULPS	Copper Vein
34	McCLUSKY	Copper Occurrence
35	GRAY	Findlay (1969a, p. 16)
36	NEW JERSEY	Findlay (1969a, p. 16)
37	PAGISTEEL	D.I.A.N.D. (1982, p. 195)
38	AHEARNE	Green (1972, p. 139); This Report
39	FRAN	Green (1972, p. 143)
40	FORD	Copper-Lead Vein
41	SLATS	Copper Vein
42	JEE	
43	DRESEN	Copper Vein
44	FOUND	Copper Vein; D.I.A.N.D. (1982, p. 198)
45	BUT	Copper Vein
46	NAT	Lead-Silver-Zinc-Copper Vein; D.I.A.N.D. (1982, p. 198)
47	BRAINE	D.I.A.N.D. (1982, p. 195-196,198)
48	BOND	Green (1972, p. 139)
49	LINGHAM	Lead-Zinc Vein
50	NEWT	Lead-Zinc Vein
51	SIHOTA	Copper-Zinc Vein
52	CLOUTIER	Lead-Zinc-Silver-Copper-Gold Vein
53	SLAB	Findlay (1969b, p. 17-18)
54	LOUIE	Copper Vein
55	EATON	This Report
56	CORD	D.I.A.N.D. (1982, p. 196,198)
57	ZAP	D.I.A.N.D. (1981, p. 241)
58	J.T.	This Report
59	ARCTOS	D.I.A.N.D. (1982, p. 196-197)
60	RAD	D.I.A.N.D. (1982, p. 197)
61	URSUS	D.I.A.N.D. (1982, p. 197)
62	SPRING	D.I.A.N.D. (1981, p. 244)
63	DEAL	D.I.A.N.D. (1981, p. 244)
64	FACE	D.I.A.N.D. (1982, p. 197-198)
65	ADUB	D.I.A.N.D. (1982, p. 195,198)
66	HAIL	D.I.A.N.D. (1982, p. 195)
67	PIK	D.I.A.N.D. (1981, p. 244); D.I.A.N.D. (1982, p. 198)
68	SNOW STAR	D.I.A.N.D. (1982, p. 195)
69	ROD	D.I.A.N.D. (1981, p. 242)
70	BLUE LITE	D.I.A.N.D. (1981, p. 243-244)
71	BOZO	Sinclair et al (1976, p. 62)
72	GNUCKLE	Morin et al (1977, p. 125)
73	BAG	Morin et al (1980, p. 13)
74	JAZ	Morin et al (1979, p. 43)
75	PITCH	Morin et al (1979, p. 44)
76	SER	Morin et al (1979, p. 45)
77	KATHY	Morin et al (1980, p. 14)
78	LEEN	D.I.A.N.D. (1982, p. 198)
79	D. BURKE	D.I.A.N.D. (1982, p. 198)
80	SHARON	D.I.A.N.D. (1982, p. 198)
81	BREFAULT	D.I.A.N.D. (1982, p. 198)
82	KISS	D.I.A.N.D. (1982, p. 198)
83	COLLEEN	D.I.A.N.D. (1982, p. 198)
84	SAM	D.I.A.N.D. (1982, p. 198)
85	FOHU	
86	NANCY	This Report

MARG

Archer, Cathro and
Associates (1981) Limited

Geochemical Target
106 D 1 (3)
(64°00'N,134°27'W)

Claims: TUDL (32)

Current Work and Results:

The claims cover a geochemical anomaly underlain by graphitic schists within the Keno Hill 'Central Quartzite'. The ground was initially staked as the JACK, MARG and HEATHER claims in 1965 by Canadian Superior Exploration Limited to cover a Pb-Zn anomaly outlined by the G.S.C.'s Operation Keno. It was examined in 1965-66 by a Joint Venture between Canadian Superior Exploration Ltd. and United Keno Hill Mines Ltd. In 1977, it was restaked as the FLASH claims by Mountaineer Mines Ltd. and Welcome North Mines Ltd. but no work was recorded. In 1982, reconnaissance scale soil and rock sampling and a re-evaluation of old trenches was carried out for 2X Joint Venture.

******

DUBLIN GULCH

Canada Tungsten Mining
Corporation Limited;
Queenstake Resources
Limited

Tungsten Skarn
106 D 4 (19)
(64°02'N,135°50'W)

Reference: D.I.A.N.D. (1982, p. 193-195).

Claims: ALEC; BOB; C.J.; DAVE; D.G.; JEFF; MAR; MOLE; R.D.; SMOKEY; WEASEL. In total 891 claims plus fractions.

Source: Summary by K. Grapes from assessment report 091387 by C. Orssich and J. Donnelly.

Current Work and Results:

During the summer of 1982 three NQ holes were drilled on the MAR claims; one hole totalling 287.13 m on the MAR 19 claim and two holes totalling 451.11 m on the MAR 21 claim. Thirty trenches were excavated on the property; six on the D.G. 53, 54 claims, two on MAR 1, nine on MAR 3, three each on MAR 5 and 11, one each of MAR 6, 8, 19, and 21, and three on ALEC 14.

All three diamond drill holes intersected tungsten mineralization. The best values returned were from hole 82-1; 0.18% WO_3, 0.34 g Au/t over 0.8 m and 0.139% WO_3 over 1.7 m. Best mineralization occurs in a dark green hedenbergite skarn containing minor to moderate scheelite mineralization and veins and/or veinlets of pyrrhotite. Values returned from a fracture zone containing chlorite and light green carbonate with an arsenopyrite-sericite vein were 1.37 g Ag/t and 0.96 g Au/t.

******

EATON

Wernecke Joint Venture;
Archer, Cathro and
Associates (1981) Limited

Copper, Uranium
Breccia
106 D 16, 106 E 1
(55)
(65°00'N,134°26'W)

Reference: D.I.A.N.D. (1982, p.192-193,196).

Claims: PIKE 1-51,55-108

Source: Summary by K. Grapes from assessment report 091437 by W.D. Eaton.

Current Work and Results:

The 1982 program included grid geochemical and geophysical (magnetic, IP, VLF-EM and radiometric) surveys over a large soil anomaly outlined in 1981, as well as detailed geological mapping, geochemical sampling and hand trenching.

Soil and rock chip samples collected in the area of the 1981 anomaly were analyzed for copper and molybdenum.

The geophysical surveys classified the rock units in terms of magnetic susceptibility, sulphide content and resistivity as well as outlining fault zones.

A trench was excavated on the radioactive quartz float train. The trench did not reach bedrock but did show that the zone of anomalous soils associated with the float train is narrow.

******

J.T.

Hacienda Oil and Minerals
Limited;
W.G. Timmins Exploration
and Development Limited

Silver, Lead Vein
106 D 3 (58)
(64°03'N,135°19'W)

Reference: D.I.A.N.D. (1981, p.237,241).

Claims: J.T. 1-56; H.L. 1-32

Source: Summary by K. Grapes from assessment report 090912 by B.J. Wing and W.G. Timmins.

History:

In 1968 Silver Springs Mines Ltd. conducted soil geochemical, geological and geophysical surveys and trenched on the Silver-Springs claim group, which is now covered by the J.T. and H.L. claims. In 1971 Canada Reserve Oil and Gas Limited conducted a geophysical program which outlined several conductors. W.G. Timmins Exploration and Development Ltd. conducted airborne magnetometer, VLF electromagnetic and radiometric surveys in 1979, delineating several conductors.

Current Work and Results:

Follow-up ground geophysical, geological and geochemical surveys were conducted in 1981 to focus on the anomalies delineated in the 1979 airborne survey.

Two airborne VLF-EM anomalies were located on the ground by the follow-up surveys. A weak conductor striking north-northeast and continuous over 1,200 m occurs east of Hanson Lake. A smaller conductor striking 340° and extending 800 m occurs to the west and converges with the south end of the first conductor.

Two hundred and fifty soil samples were collected and analyzed for Cu, Pb, Zn and Ag. Four zones anomalous in silver were delineated. Two of the zones are located along strike of the southerly VLF-EM conductor. One anomaly appears coincident with a zinc anomaly along strike with the VLF-EM conductor to the north of the property.

The only mineralization reported on the property was tetrahedrite in a north-northwest striking quartz vein approximately one metre in width.

******

1982 MINERAL CLAIMS STAKED

MARG	106 D 1 (3)
Archer Cathro and Associates (1981) Limited	(64°30'N,134°28'W)

Claims 1982: TUDL 1-32

J.T.	106 D 3 (58)
K. Hepner	(64°03'N,134°20'W)

Claims 1982: RAFE 1

NANCY	106 D 6, 11 (86)
R. Furniss	(64°30'N,135°04'W)

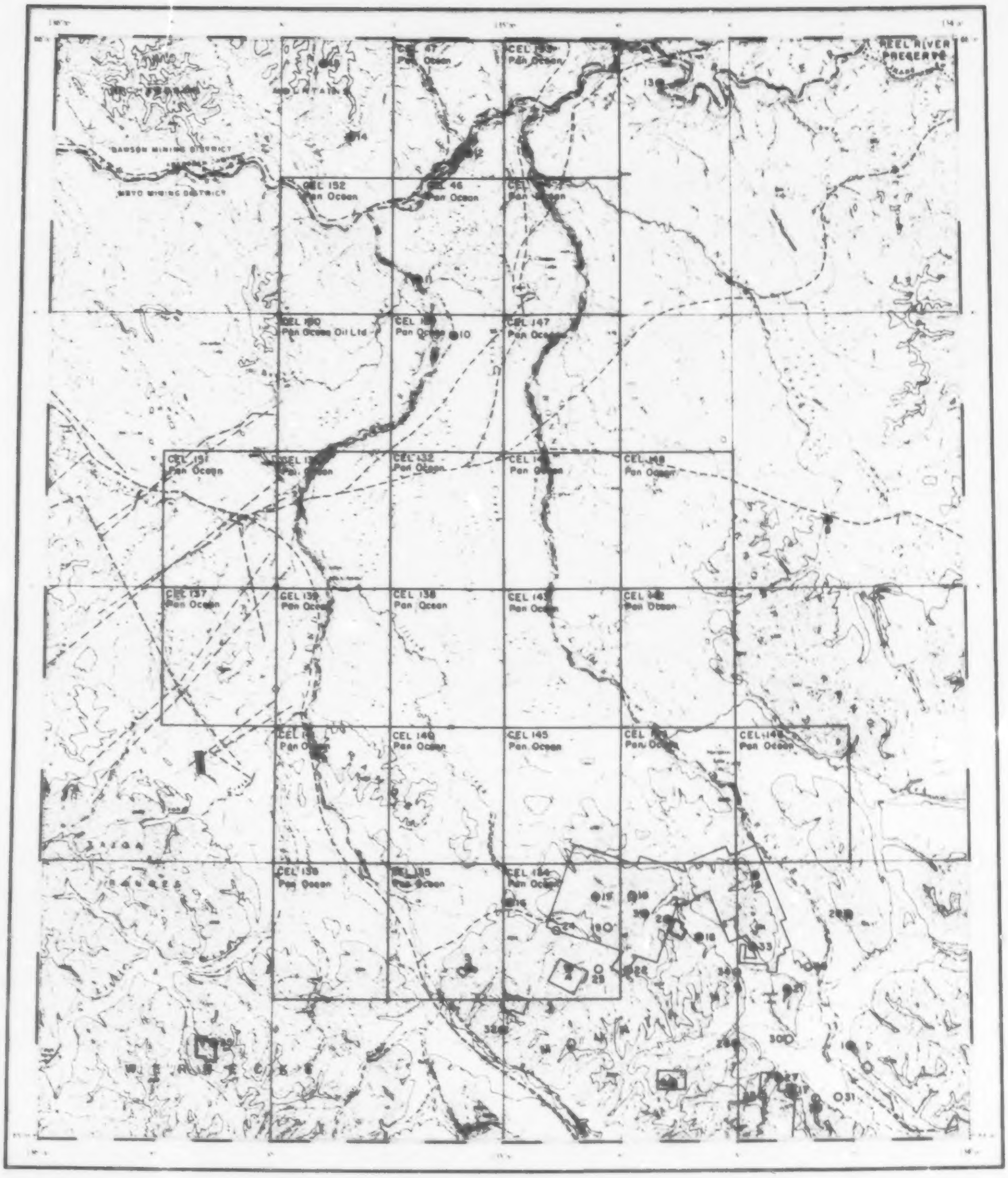
Claims 1982: NANCY 1-3

AHEARNE	106 D 15 (38)
Wolfe Resources	(64°46'N,134°22'W)

Claims 1982: BUG 1-6

******

106E


PEEL RIVER PRESERVE
DAWSON MINING DISTRICT
MAYO MINING DISTRICT
CEL 147
Pan Ocean
CEL 152
Pan Ocean
CEL 146
Pan Ocean
CEL 150
Pan Ocean Oil Ltd
CEL 147
Pan Ocean
CEL 151
Pan Ocean
CEL 132
Pan Ocean
CEL 148
Pan Ocean
CEL 137
Pan Ocean
CEL 136
Pan Ocean
CEL 140
Pan Ocean
CEL 145
Pan Ocean
CEL 135
Pan Ocean
CEL 134
Pan Ocean

WIND RIVER
YUKON TERRITORY

Kilometres 5 0 5 10 15 20 25 30 Kilometres

●^{61}	Mineral Deposit or Occurrence see Key on facing page		Placer Leases in good standing (Jan 1983)	— — —	Tote Trail
○^{72}	Unmineralized Target		Placer Claims in good standing (Jan 1983)		[illegible] Road
	Mineral Claims in good standing (Jan 1983) and staked before Jan 1982	CEL	Coal Exploration Licence	✧	Oil or Gas Well
	Mineral Claims staked in 1982	CML	Coal Mining Lease		Airstrip

WIND RIVER MAP-AREA (NTS 106 E)

General Reference: GSC Open File 715 by: D.K. Norris, 1980.
GSC Map 1528A by: D.K. Norris, 1982.

NO.	PROPERTY NAME	REFERENCE
1	IRENE	Blusson (1976, p. 132)
2	GREMLIN	This Report
3	CHLOE	Lead-Zinc Occurrence
4	FLUNK	Sinclair et al (1976, p. 65-67)
5	FORSTER (MST)	Sinclair et al (1975, p. 67-68); Morin et al (1977, p. 133)
6	IGOR	This Report
7	MAGIC	Sinclair et al (1975, p. 69)
8	HENDRY (DTS)	Sinclair et al (1975, p. 63-64)
9	PRONGS	Camsell (1907, p. 30)
10	CHAPPIE	Camsell (1907, p. 27-30)
11	BASIN	Camsell (1907, p. 27-30)
12	SAINVILLE	Camsell (1907, p. 41-46)
13	LOPSTICK	Camsell (1907, p. 41-46)
14	ONCE	Sinclair et al (1975, p. 86-87)
15	TUKU	Sinclair et al (1975, p. 87)
16	SLATER	Coal
17	OTIS	D.I.A.N.D. (1981, p. 246-247)
18	SCYLLA	D.I.A.N.D. (1981, p. 247)
19	DEER	Morin et al (1980, p. 18-20)
20	BEV	Sinclair et al (1976, p. 63)
21	WERNECKE	Morin et al (1980, p. 17)
22	YOGI	Morin et al (1980, p. 21)
23	JEANETTE	Sinclair et al (1976, p. 70)
24	WINDY	Sinclair et al (1976, p. 71)
25	CUS	
26	MARTET	Morin et al (1977, p. 128-129)
27	THORIUM	Morin et al (1977, p. 128)
28	MTR	Morin et al (1979, p. 48)
29	ORION	Morin et al (1979, p. 45-46)
30	GSTD	Morin et al (1979, p. 46)
31	POLARIS	Morin et al (1979, p. 47)
32	TAR	Morin et al (1980, p. 20)
33	RIN	Morin et al (1980, p. 18)
34	RAPI	Morin et al (1979, p. 49)
35	LWR	This Report

GREMLIN

Wernecke Joint Venture;
Archer, Cathro and
Associates (1981) Limited

Copper, Silver, Cobalt
106 E 2 (2)
(65°11'N,134°58'W)

References: Morin et al (1977, p.132-133); Norris (1975); Sinclair et al (1976, p.69-70).

Claims: DEMON 1-8

Source: Summary by K. Grapes from assessment report 091436 by W.D. Eaton.

History:

The DEMON claims were staked in 1982 to cover the Gremlin copper-cobalt occurrence formerly held by Cyprus Anvil Mining Corp. Since 1975 work on the claims has consisted of stream sediment, soil and rock chip geochemical sampling, geological mapping and geophysical surveying (magnetometer).

Current Work and Results:

Detailed mapping and chip sampling programs were conducted on the claims in 1982, with emphasis towards identification of the mode of occurrence, grade, extent and zoning of mineralization.

Copper-cobalt mineralization is best developed in a siderite unit, while pyrite is the dominant sulphide in underlying strata, veins and stockwork. The siderite unit, containing coarse chalcopyrite with pyrite and minor cobaltite, occurs as two, almost massive, siderite lenses one metre apart. The sulphides occur as irregular massive pods up to 20 cm in diameter. The upper lens averages one metre in thickness and has a strike length of 150 m. Stockworks and most veins in the underlying rock have been truncated along the base of the lower lens. Seven, 10 kg channel samples were taken from the lowest lens. Highest values reported (3.85% Cu and 11.2 ppm Ag over one metre) were from the thickest part of the lens. Silver values are coincident with chalcopyrite, with cobalt occuring as cobaltite. Veins of massive pyrite and minor chalcopyrite up to 10 cm wide occur within the stockwork. Two chip samples of the stockwork returned values of 0.16% and 0.57% Cu with low cobalt, silver, lead and zinc values. Quartz, dolomite and siderite are the main gangue minerals.

******

IGOR

Wernecke Joint Venture;
Archer, Cathro and
Associates (1981) Limited

Copper, Uranium
Breccia
106 E 2 (6)
(65°03'N,134°38'W)

Reference: D.I.A.N.D. (1982, p.201).

Claims: IGOR 1-26

Source: Summary by K. Grapes form assessment report 091445 by W.D. Eaton.

Current Work and Results:

In 1982, nine holes totalling 1,043.4 m were drilled to test 1981 geophysical anomalies, and to determine the orientation of known mineralized zones. Radioactive and sulphide rich sections of the core were assayed for Cu, U, Co and Ag. Significant uranium mineralization and/or new areas of copper mineralization were not intersected.

Drilling and surface work has shown that metals are not uniformly distributed throughout the breccia body.

******

LWR

Wernecke Joint Venture;
Archer, Cathro and
Associates (1981) Limited

Lead, Zinc
106 E 4 (35)
(65°05'N,135°39'W)

References: D.I.A.N.D. (1982, p.201); Morin et al (1980,p.21).

Claims: FLAT 1-16

Source: Summary by K. Grapes from assessment report 091443 by W.D. Eaton.

History:

In 1974 Cyprus Anvil explored the area for Mississippi Valley Type lead-zinc deposits by conducting reconnaissance stream sediment surveys. In 1979 the Wernecke Joint Venture conducted airborne radiometric surveys over the southern part of the area and the Geological Survey of Canada conducted a reconnaissance stream sediment survey. In 1977 Getty Minerals Ltd. staked the LWR 1-284 claims to cover lead, zinc and copper anomalies. In 1977 and 1978 the claims were soil sampled, prospected, mapped and hand trenched, leading to the discovery of several stratabound and vein galena and sphalerite occurrences. Wernecke Joint Venture staked the FLAT claims to cover the main lead-zinc occurrences when the LWR claims expired in the spring of 1982.

Description:

The FLAT claims are located 165 km north of Mayo, and 55 km northeast of the Hart River airstrip. The property is underlain by Wernecke Supergroup sedimentary and volcanic rocks and is surrounded by unconformably overlying lower to middle Paleozoic platform carbonate and clastic rocks. Numerous mafic sills and dykes up to 100 m wide intrude the older rocks and are truncated by the unconformity.

Current Work and Results:

Exploration in 1982 consisted of geological mapping and prospecting.

Base metal sulphides in sedimentary rocks are confined to the lower Quartet Group and occur in three modes: 1) as fracture fillings of sphalerite and galena with pyrite, quartz and carbonate; 2) as sphalerite and minor galena occurring with quartz and pyrite as disseminated blebs up to 1 cm in diameter; and 3) as bands of massive coarse-grained galena with minor pyrite, sphalerite and quartz, filling open spaces in brecciated horizons within the dolomite-chert unit.

Disseminated chalcopyrite and pyrite are common in metavolcanic rock, while disseminated chalcopyrite, pyrite, hematite and trace cobaltite occur in a diatreme breccia body.

******

1982 MINERAL CLAIMS STAKED

GREMLIN
Archer Cathro and
Associates (1981) Limited

106 E 2 (2)
(65°11'N,134°23'W)

Claims 1982: DEMON 1-8

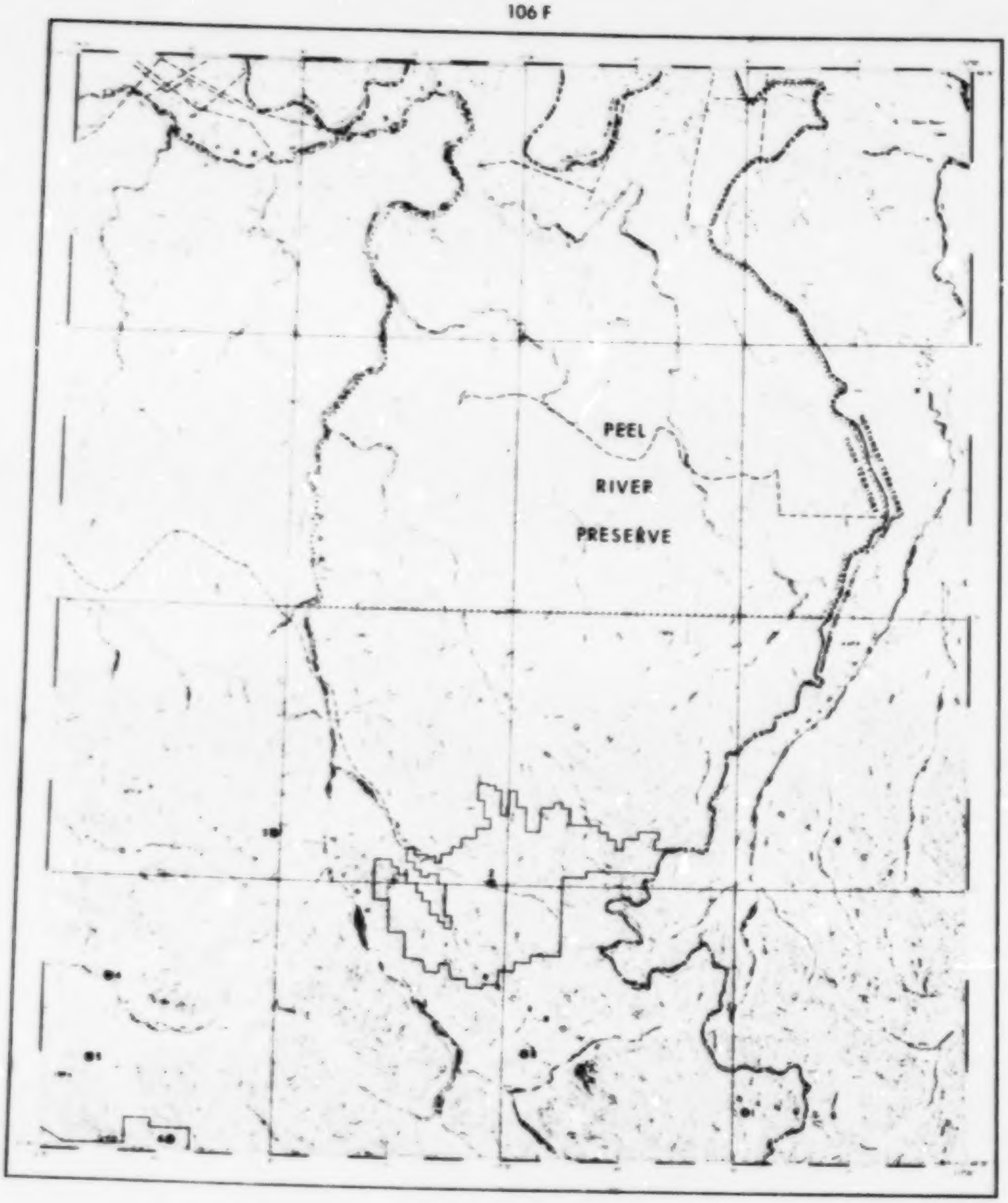
LWR
Archer Cathro and
Associates (1981) Limited

106 E 4 (35)
(65°05'N,135°23'W)

Claims 1982: FLAT 1-16

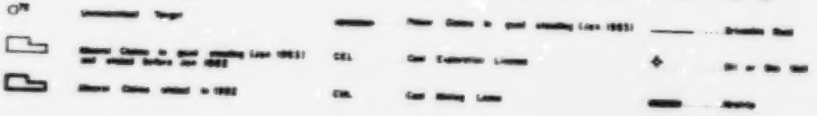
******

106 F


PEEL
RIVER
PRESERVE

SNAKE RIVER

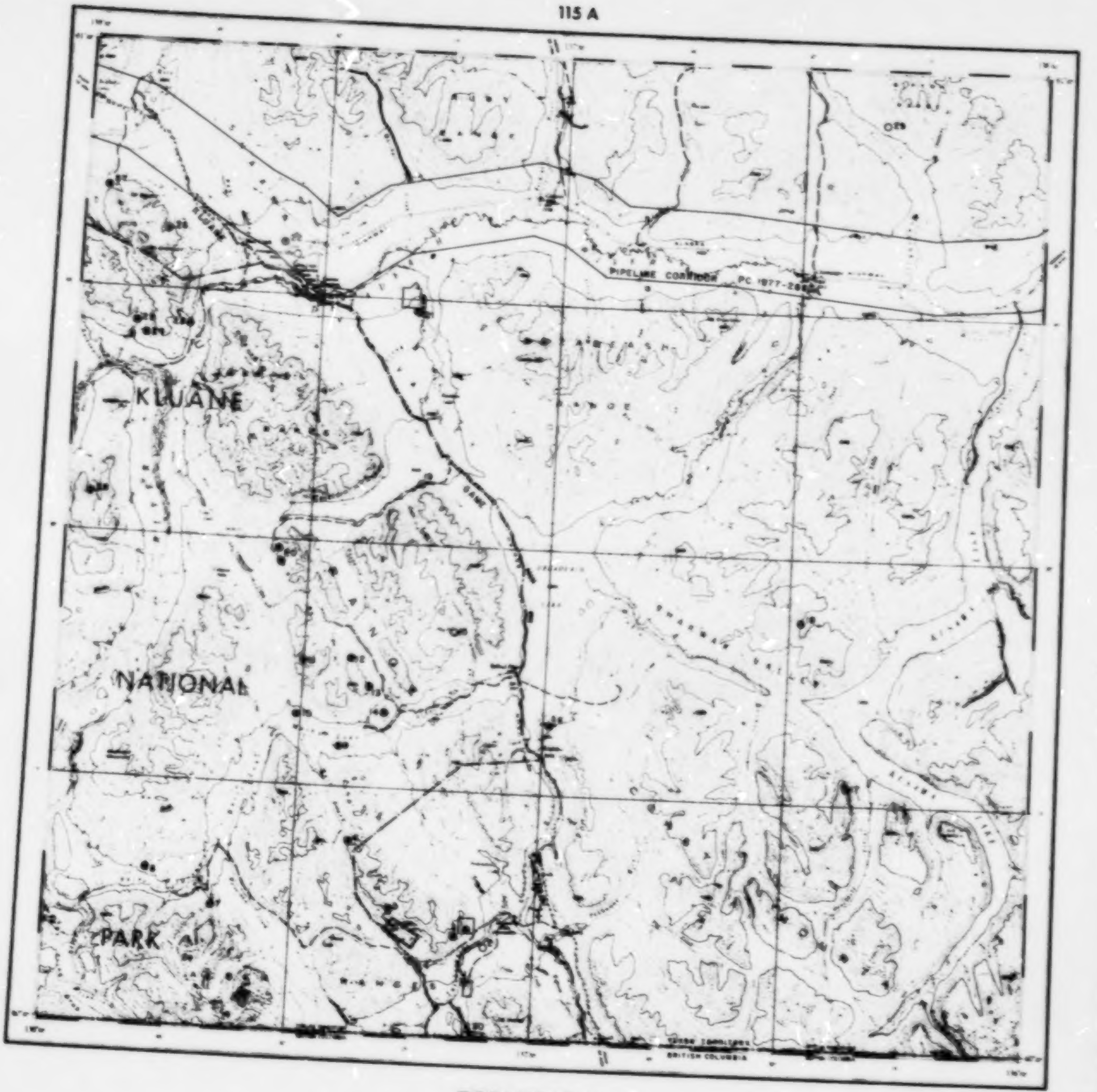
YUKON TERRITORY NORTHWEST TERRITORIES



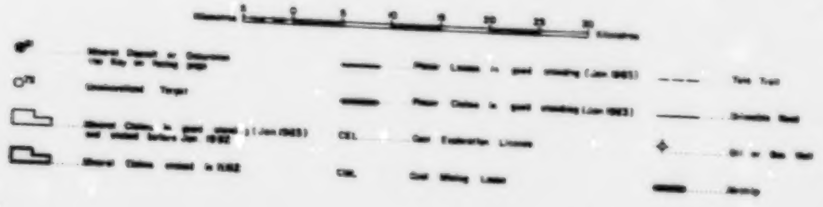
SNAKE RIVER MAP-AREA (NTS 106 F)

General Reference: GSC Open File 715 by: D.K. Norris, 1980.
GSC Map 1529A by: D.K. Norris, 1982.

NO.	PROPERTY NAME	REFERENCE
1	VYE	Zinc Stratabound
2	CREST	Green & Godwin (1963, p. 15-18)
3	HOME	Zinc Occurrence
4	PLAINS (KEN)	Sinclair et al (1976, p. 73)
5	YUK	Sinclair et al (1976, p. 73)
6	VOLE	D.I.A.N.D. (1982, p. 203)
7	LAURA	Morin et al (1977, p. 134)
8	BUH	Morin et al (1977, p. 134)


115 A
KLUANE
NATIONAL
PARK
PIPELINE CORRIDOR PC 1977-26
YUKON TERRITORY
BRITISH COLUMBIA

DEZADEASH
YUKON TERRITORY


5
0
5
10
15
20
25
30
CEL
CML

DEZADEASH MAP-AREA (NTS 115 A)

General Reference: GSC Map 1019A and Memoir 268 by: E.D. Kindle, 1952.
GSC Open File 831 by: R.B. Campbell and C.J. Dodds, 1982.

NO.	PROPERTY NAME	REFERENCE
1	JACKPOT	Findlay (1969b, p. 43-44); Sinclair & Gilbert (1975, p. 72)
2	DALTON	
3	KANE	D.I.A.N.D. (1981, p. 251)
4	CHICKALOON	
5	PHOTO	Findlay (1969a, p. 74)
6	MUSH	Skinner (1961, p. 37-38)
7	BATES	Kindle (1953, p. 56)
8	FENTON	Copper Vein
9	CAVE	Copper-Silver Vein
10	SHAFT	Copper Occurrence
11	BELOUD	Kindle (1952,p. 49-50,55)
12	HUSKY	Copper
13	WREN	Copper
14	KEL	Copper
15	SHORTY	Kindle (1953, p. 49,55)
16	KLUKSHU	Copper Occurrence
17	DEVILHOLE	Copper-Molybdenum-Lead Porphyry
18	KUSAWA	Skarn Copper
19	MILLHOUSE	
20	JOHOBO	Findlay (1967, p. 55); Kirkham (1971, p. 85)
21	REX	Findlay (1967, p. 55); Sinclair & Gilbert (1975, p. 73)
22	ELGIN	Skarn Copper
23	STRIDE	Kindle (1953, p. 56)
24	SUGDEN	Kindle (1953, p. 58)
25	FERGUSON	Bostock (1937, p. 11); Bostock (1936, p. 12)
26	DECOELI	Copper-Asbestos Vein
27	KLOO	Findlay (1967, p. 54)
28	SOUTHER	Souther & Stanciu (1975, p. 66-70)
29	SIFTON	D.I.A.N.D. (1981, p. 251)
30	CHARLIE	D.I.A.N.D. (1982, p. 205)
31	KID	This Report

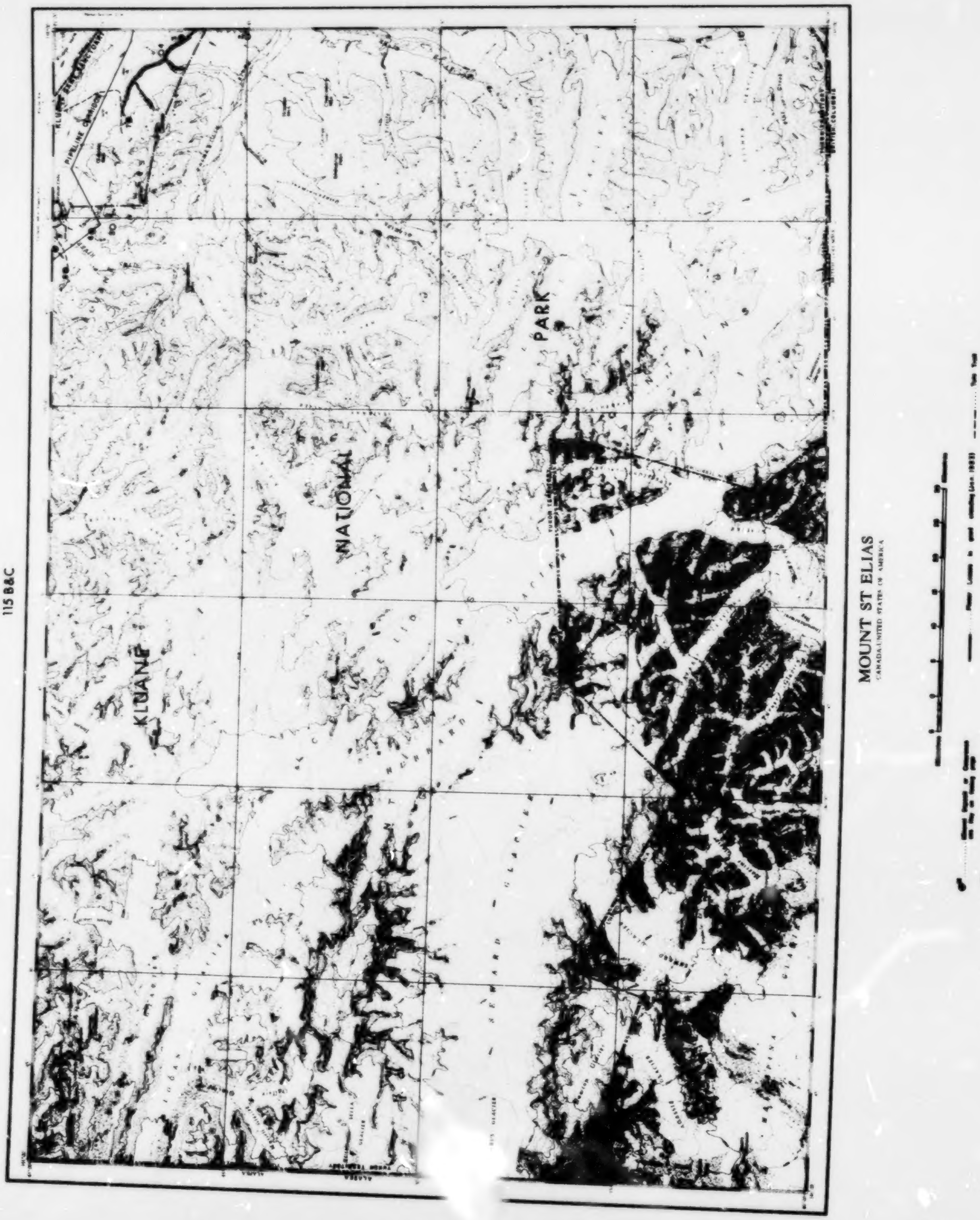
1982 MINERAL CLAIMS STAKED

KID 115 A 3 (31)
Noranda Exploration Company Limited (60°06'N,137°16'W)

Claims 1982: KID 1-32

******

115 B&C


KLUANE
NATIONAL
PARK
PIPELINE CORRIDOR
HUBBARD
SEWARD GLACIER
ALASKA
BRITISH COLUMBIA

MOUNT ST ELIAS
CANADA-UNITED STATES OF AMERICA

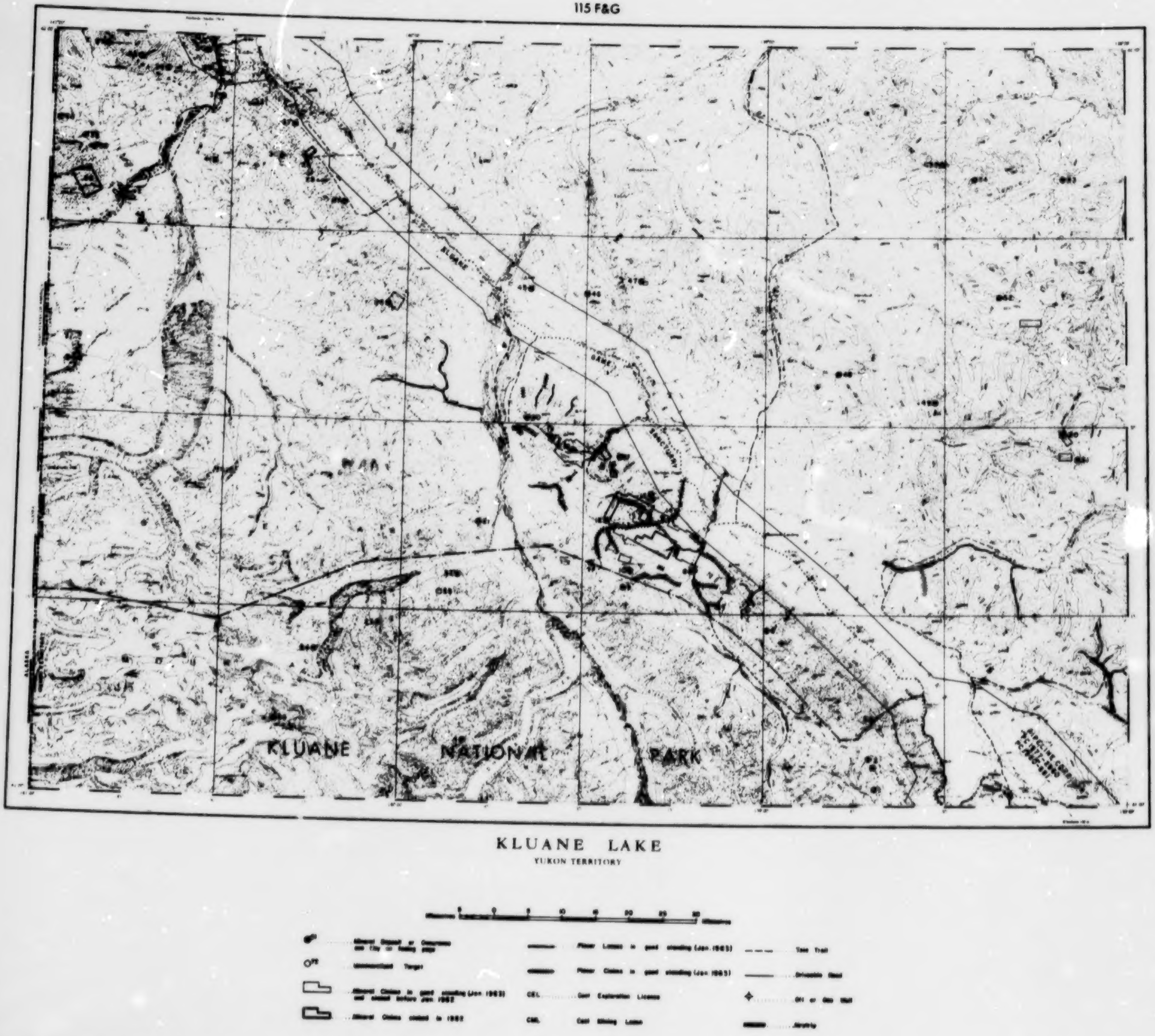
MOUNT ST. ELIAS MAP-AREA (NTS 115 B-C)

General Reference: GSC Map 1143A by: J.O. Wheeler, 1963.
GSC Open File 830 by: R.B. Campbell and C.J. Dodds, 1982.

NO.	PROPERTY NAME	REFERENCE
1	PLUG	Copper-Silver Occurrence
2	KASKAWULSH	Copper-Silver Occurrence
3	KIMBERLEY	Kindle (1952, p. 58)
4	JARVIS	McConnell (1905, p. 1-18)
5	DULUTH	Nickel-Copper Magmatic
6	GIBBONS	Nickel-Copper Magmatic
7	TELLURIDE	Copper-Zinc-Silver-Gold-Nickel Massive
8	BULLION	Gypsum-Copper-Lead Stratabound
9	SHEEP	McConnell (1905, p. 1-18)

115 G/F

115 F&G


KLUANE
KLUANE NATIONAL PARK
SANCTUARY
ALASKA
Miles 5 0 5 10 15 20 25 30 Miles
Mineral Deposit or Occurrence and Key to Mining Data
Unconfirmed Target
Mineral Claims in good standing (Jan. 1963) and staked before Jan. 1962
Mineral Claims staked in 1962
Placer Leases in good standing (Jan. 1963)
Placer Claims in good standing (Jan. 1963)
CEL Coal Exploration Licence
CML Coal Mining Lease
Tote Trail
Driveable Road
Oil or Gas Well
Airstrip

KLUANE LAKE

YUKON TERRITORY

KLUANE MAP-AREA (NTS 115 F-G)

General Reference:	GSC Map 1177A and Memoir 340 by: J.E. Muller, 1967. GSC Open File 829 by: R.B. Campbell and C.J. Dodds, 1982.

NO.	PROPERTY NAME	REFERENCE
1	METALLINE	McConnell (1905, p. 18)
2	STOVE	Muller (1967, p. 113-114)
3	CONGDON	Sinclair & Gilbert (1975, p. 66-67)
4	MULLER	Muller (1967, p. 112)
5	DICKSON	Nickel-Copper-Cobalt Magmatic
6	DESTRUCTION	Nickel-Copper Magmatic
7	WINDGAP	Craig & Laporte (1972, p. 153-154)
8	DUKE	Asbestos
9	HOGE	Muller (1967, p. 113-115)
10	AMPHITHEATER	Muller (1967, p. 113-115)
11	WADE	Copper-Silver
12	CORK	D.I.A.N.D. (1981, p. 256)
13	GLEN	This Report
14	BURWASH	Cairnes (1915, p. 31)
15	JACQUOT	Craig & Laporte (1972, p. 103); Kirkham (1971, p. 85)
16	QUILL	Findlay (1969a, p. 70-72); Kirkham (1971, p. 85)
17	VERSLUCE	Findlay (1969a, p. 70-72)
18	WELLGREEN	Sinclair & Gilbert (1975, p. 64-65); Eckstrand (1972, p. 81-82)
19	AIRWAYS	Copper-Nickel Magmatic; This Report
20	MUSKETEER	Copper-Nickel Magmatic
21	CEMENT	McConnell (1906, p. 19-26); McConnell (1905, p. 18)
22	ST. ELIAS	Skinner (1961, p. 36)
23	SHARPE	Muller (1967, p. 112)
24	GALLOPING	Skinner (1961, p. 36)
25	ICEFIELD	Skinner (1961, p. 36)
26	GARLIC	This Report
27	LIBERTY	Copper-Nickel Occurrence
28	DUENSING	
29	CATS AND DOGS	Copper-Nickel Occurrence; This Report
30	MEXICO	Skarn Copper
31	PICKHANDLE	Kirkham (1971, p. 85)
32	SEVENSMA	
33	CANALASK	Findlay (1969b, p. 39); Sinclair & Gilbert (1975, p. 60-61); Eckstrand (1972, p. 81-82)
34	EPIC	Copper-Molybdenum Vein
35	TAYLOR	Skarn Copper-Molyubdenum
36	SANPETE	Craig & Milner (1975, p. 37-38)
37	HUMP	Johnston (1915, p. 193)
38	MEMOIR	Cairnes (1915, p. 141)
39	MCLENNAN	Cairnes (1915, p. 141)
40	RABBIT	Cairnes (1915, p. 123-124)
41	LEP	Craig & Milner (1975, p. 38-39)
42	WHITERIVER	Sinclair et al (1975, p. 138-139); D.I.A.N.D. (1982, p. 210)

43	SHARE	
44	KLETSAN	Findlay (1969b, p. 42); Moffit & Knopf (1910, p. 51-57)
45	ELEVENTHIRTY	Bostock (1952, p. 40)
46	KENNEDY	Bostock (1952, p. 40)
47	TINCUP	D.I.A.N.D. (1981, p. 256)
48	BROOKS	Muller (1967, p. 112-113)
49	TALBOT	D.I.A.N.D. (1981, p. 256)
50	RAFT	D.I.A.N.D. (1981, p. 256)
51	ROCKSLIDE	Muller (1967, p. 112-113); D.I.A.N.D. (1982, p. 210)
52	DWARF	Sinclair & Gilbert (1975, p. 70-71)
53	BIRCH	Craig & Milner (1975, p. 83)
54	BRUMMER	Craig & Milner (1975, p. 85-86)
55	RHYOLITE	Craig & Milner (1975, p. 83,87)
56	NICK	Nickel Magmatic
57	KOIDERN (M)	Morin et al (1977, p. 165)
58	CAN	This Report

GLEN — Geochemical Target
Halferdahl and Associates Ltd. — 115 G 6 (13)
(61°22'N,139°23'W)

References: D.I.A.N.D. (1982, p.209-210); Morin et al (1980, p.46).

Claims: JY (9); DEN (2); EL (2); (entire property consists of 261 claims)

Source: Summary by P. Watson from assessment report 091397 by L.B. Halferdahl.

Current Work and Results:

In 1982, 9 panned concentrate samples were collected from three tributaries of Burwash Creek. A five-gallon pail of sample was concentrated down to 200 g and the heavy minerals separated out using heavy liquids. Visible gold was seen in two samples and all creeks were anomalous in Au. Three diamond drill holes totalling 273 m were also completed in 1982.

******

GARLIC — Gold
Archer, Cathro and Associates (1981) Limited — 115 F 9 (26)
(61°40'N,140°02'W)

References: D.I.A.N.D. (1982, p. 209,210).

Claims: NARNIA 1-16

Source: Summary by P. Watson from assessment report 091433 by W.D. Eaton.

History:

The NARNIA claims were staked in 1981 to cover an area containing anomalous Au and As values in soil samples collected in the vicinity of a Cretaceous plug. The area was first staked in 1953 as the LARRY claims of Hudson Bay Mining and Smelting. In 1970, the GARLIC claims were staked by Quintana Minerals Corporation Limited as part of a regional porphyry copper project.

Description:

The property is located 13 km west of the Alaska Highway bridge over the Donjek River. It is underlain by volcanic and volcaniclastic rocks which are dominantly andesite and dacite flows of the Permian Station Creek Formation. A Cretaceous gabbro to granodiorite plug, one km in diameter, intrudes the volcanic units and is separated into two sections by a pendant of the older rocks. Cretaceous felsic dykes were also mapped on the property.

The Station Creek Formation rocks in the roof pendant and in a 50 to 150 m wide band peripheral to the pluton show widespread silicification and gossans with overprinted carbonate alteration.

Current Work and Results:

In 1982, 292 soil samples and 29 reconnaissance rock chip samples were collected. Rock samples contained lower values of Au than soil samples. The highest result reported was 438 ppb Au from a 10 m wide chip sample across a weakly malachite-stained quartz carbonate vein. The higher values found in soil samples may indicate the presence of hairline, carbonate-filled fractures in recessive-weathering rocks surrounding the more resistant silicified rocks that were sampled.

******

1982 MINERAL CLAIMS STAKED

CAN 115 F 15 (58)
S. Goodlife (61° 48'N,140° 54'W)

Claims 1982: CAN 1-52

CATS AND DOGS 115 F 16 (29)
G. Harris (61° 51'N,140° 17'W)

Claims 1982: FIFTY TWO 1-8

AIRWAYS 115 G 5 (19)
C. Smalley (61°29'N,139°35'W)

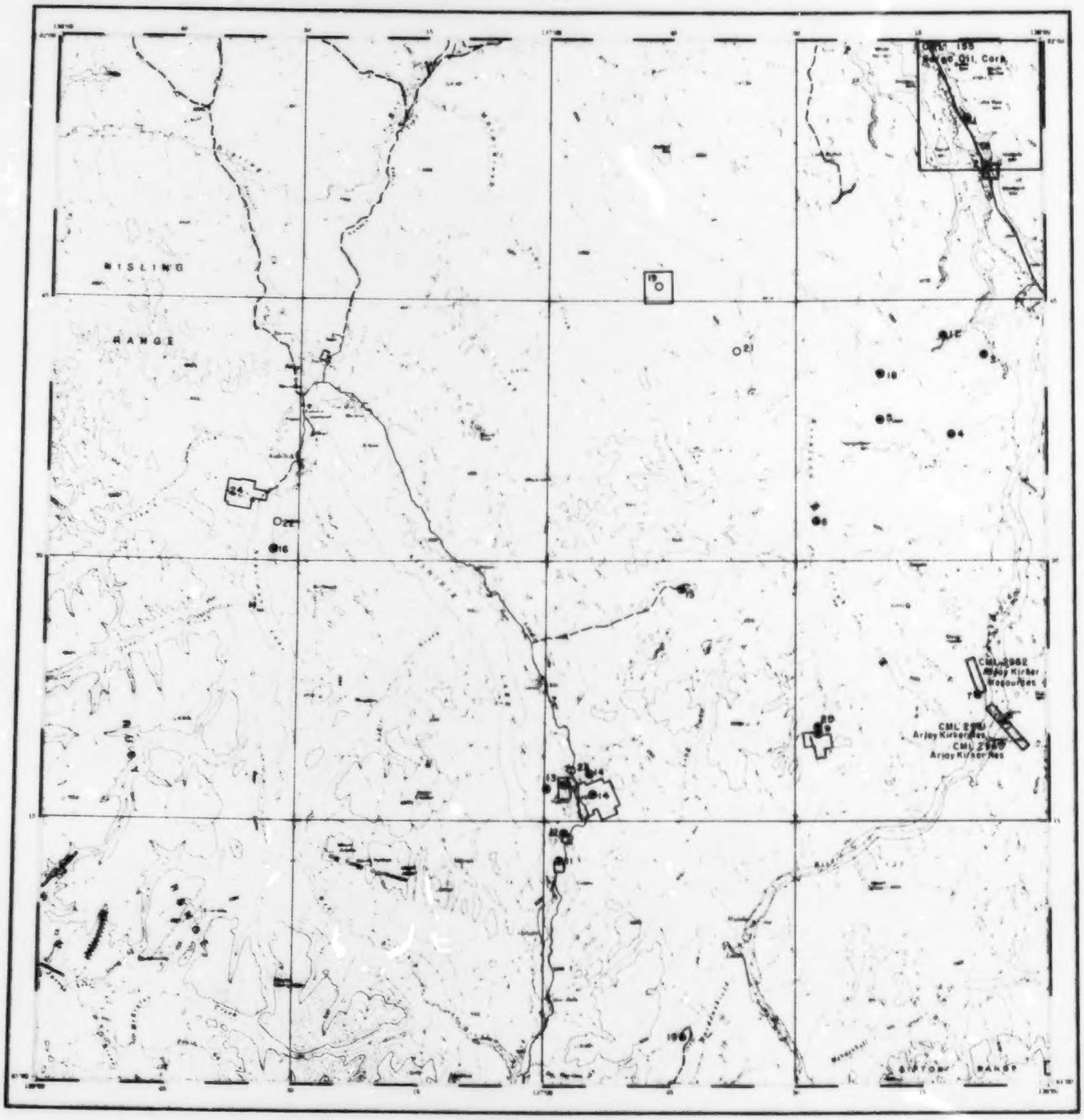
Claims 1982: DI 1-4

GLEN 115 G 6 (13)
G. Halferdahl (61°20' - 61°24'N,
139°10' -139°26'W)

Claims 1982: JY 57-70; KAT 25-46; JO 9-10; WEN 9-10;
DEN 9-10; SUE 11-14; NAN 9-14; JAN 9-48
EL 1-8, 11-28

******

115 H


NISLING
RANGE
CML 155
Oil Corp
CML 2962
Arjay Kirker
Resources
CML 2963
Arjay Kirker Res
CML 2964
Arjay Kirker Res
SIFTON
RANGE

AISHIHIK LAKE
YUKON TERRITORY

Kilometres 5 0 5 10 15 20 25 30 Kilometres

●^{10} .... Mineral Deposit or Occurrence with Key on facing page

○^{75} .... Unclassified Target

▭ .... Mineral Claims in good standing (Jan. 1983) and staked before Jan. 1982

▭ .... Mineral Claims staked in 1982

—— .... Placer Leases in good standing (Jan. 1983)

▬▬ .... Placer Claims in good standing (Jan. 1983)

CEL .... Coal Exploration License

CML .... Coal Mining Lease

— — — .... Tote Trail

—— .... Driveable Road

✧ .... Oil or Gas Well

▬ .... Airstrip

AISHIHIK LAKE MAP-AREA (NTS 115 H)

General Reference: GSC Map 17-1973 and Paper 73-41
by: D.J. Tempelman-Kluit, 1974.

NO.	PROPERTY NAME	REFERENCE
1	LOSCH	Cairnes (1910, p. 49)
2	ANDESITE	Coal; This Report
3	AH	Copper Vein
4	MACK'S	Craig & Milner (1975, p. 80-81)
5	SNIPE	Copper Occurrence
6	KIRK	Copper Occurrence
7	VOWEL	Cairnes (1908, p. 10-15)
8	DIVISION	Coal
9	LION	Molybdenum-Lead Occurrence
10	MORAINE	D.I.A.N.D. (1981, p. 258); This Report
11	GILTANA	D.I.A.N.D. (1981, p. 258)
12	AISHIHIK	Sinclair & Gilbert (1975, p. 69-70); D.I.A.N.D. (1981, p. 258)
13	JANISIW	D.I.A.N.D. (1982, p. 213)
14	HOPKINS (ML)	Morin *et al* (1980, p. 46)
15	SATO	Craig & Milner (1975, p. 88-89)
16	SEKULMUN	
17	ORLOFF	Gold Occurrence; D.I.A.N.D. (1982, p. 213)
18	SHAD	Copper
19	BUFFALO	D.I.A.N.D. (1981, p. 258)
20	BUN	Morin et al (1977, p. 167)
21	TOSH	Morin *et al* (1980, p. 46)
22	SEK	Morin *et al* (1980, p. 47)
23	SIDE	D.I.A.N.D. (1982, p. 213)
24	HATCH	This Report

ANDESITE

Uranerz Exploration and Mining Limited

Uranium, Coal
115 H 16 (2)
(61°52'N,136°06'W)

Claims: GREAK (8)

Current Work and Results:

Low grade uranium mineralization was found accompanying clay alteration in a minor shear or major fracture system. Reconnaissance geological, geochemical and geophysical programs were conducted in 1982.

******

MORAINE

Hudson Bay Exploration and Development Company Limited

Copper, Tungsten
Skarn
115 H 2 (10)
(61°02'N,136°44'W)

References: D.I.A.N.D. (1982, p.213); D.I.A.N.D. (1981, p.258).

Claims: COOT (4)

Current Work and Results:

Pyrrhotite, chalcopyrite, molybdenite and molybdo-scheelite are erratically distributed in skarn and in marble beds exposed by trenching over several hundred metres along the contact of a quartz diorite stock. The claims were soil sampled and EM-16 and magnetometer surveys were conducted in 1982. Several pits were hand excavated to bedrock and the claims were then allowed to lapse.

******

HATCH
Canadian Occidental
Petroleum Limited

Molybdenum,Copper
Tungsten Skarn
115 H 12 (24)
(61°34'N,137°37'W)

References: D.I.A.N.D. (1982, p.213); Craig and Milner (1975, p.82); Sinclair and Gilbert (1975, p. 68-69).

Claims: THATCH (17); HATCH (6); PATCH (16); MATCH (6)

Source: Summary by P. Watson from assessment report 091063 by R.M. Kuehnbaum.

History:

The THATCH claims were staked in 1971 and the HATCH added in 1972 following a Cu, Mo, Zn geochemical program. PATCH claims were added in 1981 and MATCH in 1982. No field work was done between 1973 and 1981, when the 1973 geochemical and magnetometer survey results were re-examined.

Current Work and Results:

In 1981, a sub-cropping magnetite(?)-pyrrhotite-bearing skarn with scheelite and molybdenite was located in an area where soil samples contained up to 90 ppm W. This was examined further by detailed geological, soil geochemical, magnetic and VLF-EM surveys.

The geophysical surveys indicate conductive, magnetic skarns surrounding and/or lying directly south of an intrusive body. W, Mo and Cu soil anomalies were found roughly coincident with the magnetic anomalies.

In 1982, 4 trenches totalling 380 m in length were excavated as part of a Joint Venture program with Eldorado Nuclear Ltd. Two of the trenches reached bedrock. In the trenches, 129 soil samples were collected at 3 m intervals and analyzed for Cu, Mo, W, and, in one trench, U. Total count radiometric and magnetic suseptibility readings were also taken at each site. Seventeen grab and 22 rock chip samples were collected and analyzed for Cu, Mo, Zn, W, Ag and Au.

Silicified Yukon Group quartzite, skarn and biotite quartz monzonite were mapped in the trenches. The quartzite appears to have been affected by metasomatism during skarnification of carbonate rocks. The skarn zones are highly variable and consist of varying proportions of garnet, quartz, diopside, actinolite, magnetite, pyrite and pyrrhotite with rare trace amounts of chalcopyrite and scheelite. Two distinctive skarn types are found; calc-silicate and magnetite-pyrite-pyrrhotite.

In one trench, two skarn zones approximately 3.2 m wide, containing pyrite, pyrrhotite and magnetite were exposed. No molybdenite or scheelite were noted, but trace chalcopyrite was found. The average grade of the two zones was 277 ppm Mo, 776 ppm Cu, 90 ppm Zn, 1.9 ppm Ag, 9 ppm W and 8 ppb Au. A 0.6 m exposure of calc-silicate skarn was found 6 m to the south of the main zone.

In the second trench, 4 skarn zones were mapped. A 1.7 m wide section and a 1.0 m wide section both returned low geochemical values. A 2.4 m wide zone showed modest geochemical enrichment and contained up to 20% magnetite. The fourth zone was approximately one metre wide and a chip sample contained 0.045% WO_3, 330 ppm Mo, 770 ppm Cu, 100 ppm Zn, 2.6 ppm Ag and 115 ppb Au.

Highly fractured quartz veins up to 0.6 m wide and occasionally containing trace to 3% disseminated pyrite and trace scheelite were also found in the trenches.

******

1982 MINERAL CLAIMS STAKED

ANDESITE
Uranerz Exploration and Mining
Limited

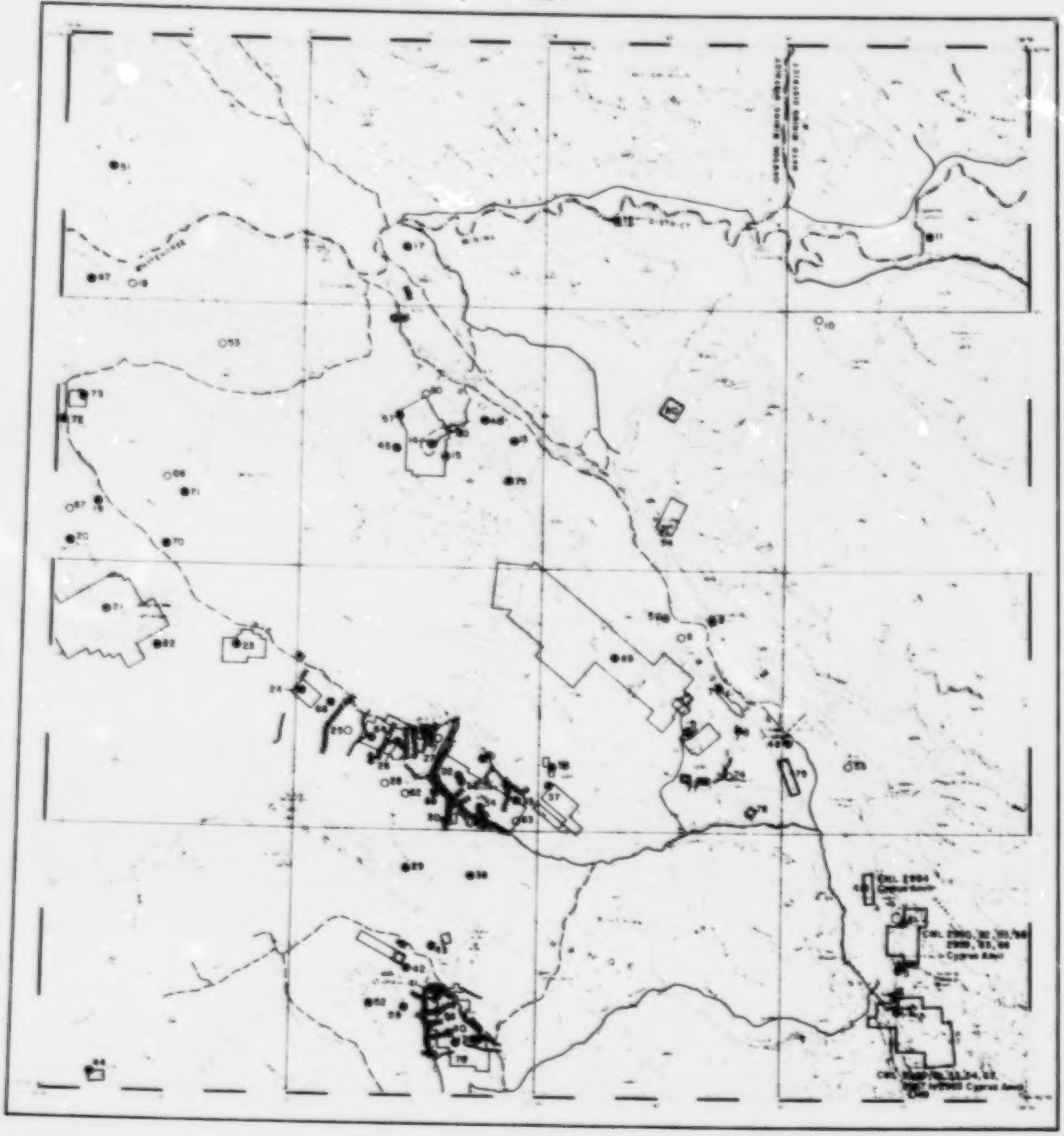
115 H 16 (2)
(61° 52'N,136° 06'W)

Claims 1982: GREAK 1-8

******

NOTES

115 I



CARMACKS
YUKON TERRITORY

CARMACKS MAP-AREA (NTS 115 I)

General Reference: GSC Open File 200 by: D.J. Tempelman-Kluit, 1972.

NO.	PROPERTY NAME	REFERENCE
1	SOUTH TANTALUS	Findlay (1967, p. 89)
2	TANTALUS MINE	Cairnes (1910, p. 59-63); Bostock (1936, p. 58-59)
3	TANTALUS BUTTE	Cairnes (1910, p. 52-53); Findlay (1969a, p. 114); Sinclair et al (1975, p. 168)
4	FIVE FINGERS MINE	Bostock (1936, p. 62-63)
5	WILLIAMS CREEK	Copper-Silver-Gold-Molybdenum Occurrence
6	MERRICE	Brock (1910, p. 14-26)
7	BONANZA KING	Green (1966, p. 42-44)
8	MAUD	
9	HOOCHEKOO	Dawson (1889, p. 145 B)
10	TOWHATA	Bostock (1936, p. 63)
11	NEEDLEROCK	McConnell (1903, p. 31,38)
12	BRADENS CANYON	Copper-Gold-Silver-Molybdenum Occurrence
13	COIN	Sinclair & Gilbert (1975, p. 48-49)
14	MINTO	Sinclair et al (1975, p. 96-100)
15	PAL	Sinclair et al (1975, p. 100-101)
16	GRENIER	Bostock (1936, p. 63)
17	PELLY	D.I.A.N.D. (1982, p. 216)
18	MINNESOTA	
19	TAD	Craig & Milner (1975, p. 77-79); D.I.A.N.D. (1982, p. 219)
20	PHELPS	Craig & Laporte (1972, p. 71-72)
21	FROG	This Report
22	STARBIRD	Craig & Milner (1975, p. 70-71)
23	CASH	Sinclair et al (1975, p. 111-112)
24	KLAZAN	This Report
25	COM	
26	REVENUE	D.I.A.N.D. (1982, p. 217)
27	COMBO	Craig & Laporte (1972, p. 83-84)
28	BOW	Craig & Laporte (1972, p. 82-83)
29	LIL	Bostock (1939, p. 16)
30	CARIBOU CREEK	Bostock (1939, p. 15-16); Sinclair et al (1975, p. 118-119)
31	KOOK (CAR)	Sinclair et al (1975, p. 117-118)
32	RED FOX	D.I.A.N.D. (1981, p. 261)
33	GUDER	D.I.A.N.D. (1981, p. 261)
34	LAFORMA	D.I.A.N.D. (1981, p. 261)
35	EMMON	Johnston (1937, p. 19-20); Craig & Laporte (1972, p. 78-79)
36	GRANITE MOUNTAIN	Findlay (1969a, p. 34-35)
37	TINTA HILL	Sinclair et al (1975, p. 120-121); Skinner (1961, p. 35-36); D.I.A.N.D. (1982, p. 219)
38	FOSTER	Bostock (1937, p. 10-11)
39	BROWN McDADE	Findlay (1969b, p. 23)
40	MT. NANSEN	Morin et al (1977, p. 167-168)
41	CYPRUS	D.I.A.N.D. (1981, p. 261)
42	ESANSEE	D.I.A.N.D. (1982, p. 217); This Report
43	DIVIDE	Sinclair et al (1975, p. 126)
44	MALONEY	Craig & Laporte (1982, p. 76-78)
45	COMANCHE	Sinclair et al (1975, p. 101-102)
46	NORTHAIR (AL)	Sinclair et al (1975, p. 107)
47	TUF	Sinclair et al (1975, p. 95)
48	CROSSING	Copper Vein
49	EWING	
50	ORI (MAC)	Sinclair et al (1975, p. 108-109)
51	KERR	Molybdenum-Copper Occurrence
52	LONELY	Copper Occurrence
53	SAM	Sinclair et al (1976, p. 146)
54	McCABE	
55	RINK	McConnell (1903, p. 37-52)
56	GOULTER	Gold-Silver Vein
57	GIANT (NAVAJO)	Sinclair et al (1975, p. 102-103)
58	BLUFF	Sinclair et al (1975, p. 122-123)
59	RUSK	Sinclair & Gilbert (1975, p. 38-39)
60	BOYLEN (SUN)	Sinclair et al (1975, p. 103)
61	HLAVAY (TINTA)	Sinclair & Gilbert (1975, p. 120-121)
62	LETA	D.I.A.N.D. (1981, p. 262)
63	DART	D.I.A.N.D. (1981, p. 262)
64	NUCLEUS	This Report
65	STU	This Report
66	MUT	D.I.A.N.D. (1981, p. 263)
67	NIT	D.I.A.N.D. (1982, p. 218,219)
68	ROC	Morin et al (1977, p. 172)
69	ZIT	D.I.A.N.D. (1982, p. 218,219)
70	PANTHER	Sinclair et al (1976, p. 142)
71	PITTS (RAINBOW)	Sinclair et al (1976, p. 143)
72	NADA	Sinclair et al (1976, p. 144)
73	SELKIRK	Sinclair et al (1976, p. 145)
74	ACE	D.I.A.N.D. (1982, p. 219)
75	FED	Morin et al (1977, p. 177)
76	DD	D.I.A.N.D. (1982, p. 219)
77	AL	This Report
78	POON	This Report
79	TOOT	This Report
80	DOME	This Report

FROG
Archer, Cathro and Associates (1981) Limited

Silver, Lead Veins
115 I 5, J 8 (21)
(62°27'N,137°57'W)

Claims: LILYPAD 1-429; NEWT (161)

References: D.I.A.N.D. (1982, p.215,216,219); D.I.A.N.D. (1981, p. 260,261).

Source: Summary by P. Watson from assessment report 091435 by D.W. Eaton.

Current Work and Results:

In 1981, trenching and mapping located veins on the property which are generally narrow and erratically mineralized.

In 1982, 637 m were drilled in 7 holes and additional mapping was carried out. Mineralized zones are characterized by: lack of vegetation; colour change in rocks (bleached, earthy); smaller rock fragments; manganese, hematite and limonite on fractures; transparent, chalcedonic, cockade, drusy or massive quartz, often rusty, vuggy and pitted; sulphides such as galena or anglesite, chalcopyrite, sphalerite and pyrite; and malachite, azurite and rare arsenopyrite, barite, fluorite and witherite. Disseminated and massive tourmaline is found in some veins and in quartz-tourmaline breccia zones.

Vein zones grade from fresh, massive, unweathered wallrock into fractured, weakly bleached wallrock with limonite and/or manganese oxides on fractures and into bands of bleached gouge from a few m to 50 m wide. Oxidized sulphides and quartz, carbonate and/or barite gangue occurs as pods in the veins, usually within gouge zones or along vein margins.

Massive volcanic wallrock is rarely weathered below 10 m from surface, but the veins are weathered and leached(?) to at least 150 m depth.

******

NUCLEUS
Archer, Cathro and Associates (1981) Limited
115 I 6 (64)
(62°20'N,137°20'W)

References: D.I.A.N.D. (1982, p.215,217,219);
D.I.A.N.D. (1981, p. 262).

Claims: NUCLEUS 1-50

Source: Summary by P. Watson from assessment report 091439 by W.D. Eaton.

Description:

The property is located near the western limit of a 100 Ma intrusive complex that includes felsic stocks, dykes and intrusive breccias. This material has intruded Paleozoic Yukon Metamorphic Complex schists and pre-Cretaceous foliated intrusive rocks. On the property, the oldest material includes chlorite schist, quartz biotite schist, quartz muscovite schist, amphibolite, impure quartzite and quartz feldspar granulite. A 100 m by 200 m gabbro-diorite mafic intrusion and non-foliated Cretaceous quartz monzonite and biotite monzonite have intruded the older rocks. A small, fine grained felsic microgranite plug and quartz feldspar porphyry dykes have also intruded in the area. A 100 m by 300 m breccia zone occurs in the microgranite.

Sulphide minerals are rare on surface. Old drill core contains oxidized material down to 15 to 40 m, below which pyrite, pyrrhotite and chalcopyrite occur disseminated and in veinlets.

Current Work and Results:

In 1982, 907 soil, 54 bulk rock and 24 grab rock samples were collected. Bulk samples were taken in old road cuts and trenches.

******

KLAZAN
Archer, Cathro and Associates (1981) Limited
Gold, Copper, Molybdenum
115 I 5,6 (24)
(62°23'N,137°30'W)

Reference: D.I.A.N.D. (1982, p.217,219).

Claims: NITRO 1-24

Source: Summary by P. Watson from assessment report 091438 by W.D. Eaton.

Description:

The area is underlain by rhyolite tuff breccia and associated felsic intrusive rocks including rhyolite intrusive breccia with pervasive argillic alteration and quartz stockwork, feldspar porphyry dykes up to 20 m wide and rhyolite dykes. These rocks are exposed over a roughly elliptical area 4.0 km by 1.5 km, surrounded by pre-Cretaceous syenite.

The quartz stockwork associated with the felsic intrusive complex is found over 200 m by 700 m, in the area of the main gossan. Up to 50 quartz veinlets per metre were counted in some areas. These veinlets are generally less than 1 mm wide. Pyrite and trace molybdenite, galena and chalcopyrite were reported.

Current Work and Results:

Core drilled in 1970 assayed 0.17% Cu over 15 m and 0.16% Cu with 0.68% MoS_2 over 3 m.

Soil and rock chip samples were collected as part of the geochemical program and analyzed for Au, Ag and Pb. Soil samples were collected on a 100 m by 50 m grid, and rock chip samples were taken every 50 m in bulldozer cuts. A 700 m by 200 m area of anomalous Au soil values coincides with the quartz stockwork zone and the main gossan zone. Rock chip samples from the main gossan contained up to 212 ppb Au. Soil samples containing silver values of up to 10.7 ppm Ag clustered about the main gossan and are only partially coincident with the Au soil anomaly. This, and two other Ag soil anomalies, also contain 100 to 595 ppm Pb.

******

STU
United Keno Hill Mines Limited;
Falconbridge Limited
Copper
115 I 6,7 (65)
(62°21' - 62°30'N,
136°42'- 137°06'W)

References: D.I.A.N.D. (1982, p.215,217-218);

D.I.A.N.D. (1981, p.262-263).

Claims: STU; HI; FIL; NOON; MOON (658 claims)

Current Work and Results:

Fifteen bulldozer trenches were excavated on the HI claims in 1982. Ten trenches were also excavated on the FIL claims, 13 on the STU claims and 8 on the NOON claims. Malachite mineralization was discovered in bedrock in trenches on the HI and the STU claims. No mineralization was found in the trenches on the FIL or the NOON claims.

******

POON
United Keno Hill Mines Limited

Copper
115 I 7 (78)
(62°17'N,136°35'W)

Claims: POON 1-4

Source: Summary by P. Watson from assessment report 091087 by T. Canam.

History:

The claims were staked to cover copper mineralization located during a reconnaissance soil sampling program.

Description:

The property is located 195 km north-northwest of Whitehorse, 1.5 km north of the Freegold Road. It is underlain by porphyritic hornblende and biotite granodiorite to quartz monzonite cut by aplite dykes and a latite porphyry dyke. The granodiorite is non-foliated to weakly-foliated, except in the mineralized zones.

Current Work and Results:

Two mineralized zones of malachite staining in strongly foliated granodiorite were mapped. The first extends for 100 m northwest along strike and is up to 20 m in width. Malachite appears to be confined to biotite-rich sections. The second zone contains weak malachite mineralization over 10 m by 5 m.

During the geochemical program, 181 soil samples were collected and analyzed for Cu. Only 6 samples contained greater than 50 ppm Cu.

******

TOOT
United Keno Hill Mines Limited;
Falconbridge Limited

Copper
115 I 8 (79)
(62°18'N,136°29'W)

Claims: TOOT 1-18

Source: Summary by P. Watson from assessment report 091085 by J.A. McFaull.

History:

The TOOT claims were staked in 1982 to cover a series of 1981 Dighem II airborne geophysical anomalies which form a northwest striking linear trend over 1,400 m long. The group was expanded to cover malachite staining on strike with the geophysical anomalies.

Description:

The property is located 195 km north-northeast of Whitehorse and 6 km south of Yukon Crossing. The claims are near the southeast end of the Klotassin Batholith, west of the contact between the biotite hornblende (pyroxene) granodiorite and Triassic basalt. The granodiorite is generally non-foliated, with weakly foliated sections in the vicinity of the geophysical anomalies. Feldspar phenocrysts up to 30 mm long occur in widespread porphyritic sections. A plug of hornblendite containing 70% hornblende in a matrix of feldspar and minor biotite is exposed over a 100 m to 200 m area.

Mineralization consists of malachite in fractures and in zones of biotite rich schlieren in weakly to non-foliated granodiorite. The 250 m by 50 m mineralized zone is on strike with the Dighem II anomalies and connected to them by a coincident airphoto lineation that extends at least 7,000 m.

Current Work and Results:

A total of 1,273 grid soil samples were collected from the claims and surrounding areas and analyzed for Cu. Of these, 196 collected on lines over the airborne anomaly, were also analyzed for Ag, Pb and Zn. No anomalous Ag, Pb or Zn values were noted coincident with the airborne geophysical anomalies.

Copper values were considered anomalous if greater than 50 ppm Cu. The main anomalous zone occurs in the area of known malachite mineralization and is probably due to traces of copper along the fault indicated on airphotos. Elsewhere on the property, several single point Cu anomalies were located.

******

1982 MINERAL CLAIMS STAKED

ESANSEE
BRX Mining and Petroleum
Corporation

115 I 3 (42)
(62°07'N,137°15'W)

Claims 1982: TAWA 1-24

STU 115 I 7 (65)
United Keno Hill Mines Limited (62° 22'N,136° 42'W)

Claims 1982: NOON 131-134

AL 115 I 7 (77)
A. Larson (62° 18'N,136° 41'W)

Claims 1982: AL 1-4

POON 115 I 7 (78)
United Keno Hill Mines Limited (62° 16'N,136° 34'W)

Claims 1982: POON 1-4

TOOT 115 I 7, 8 (79)
United Keno Hill Mines Limited (62° 18'N,136° 29'W)

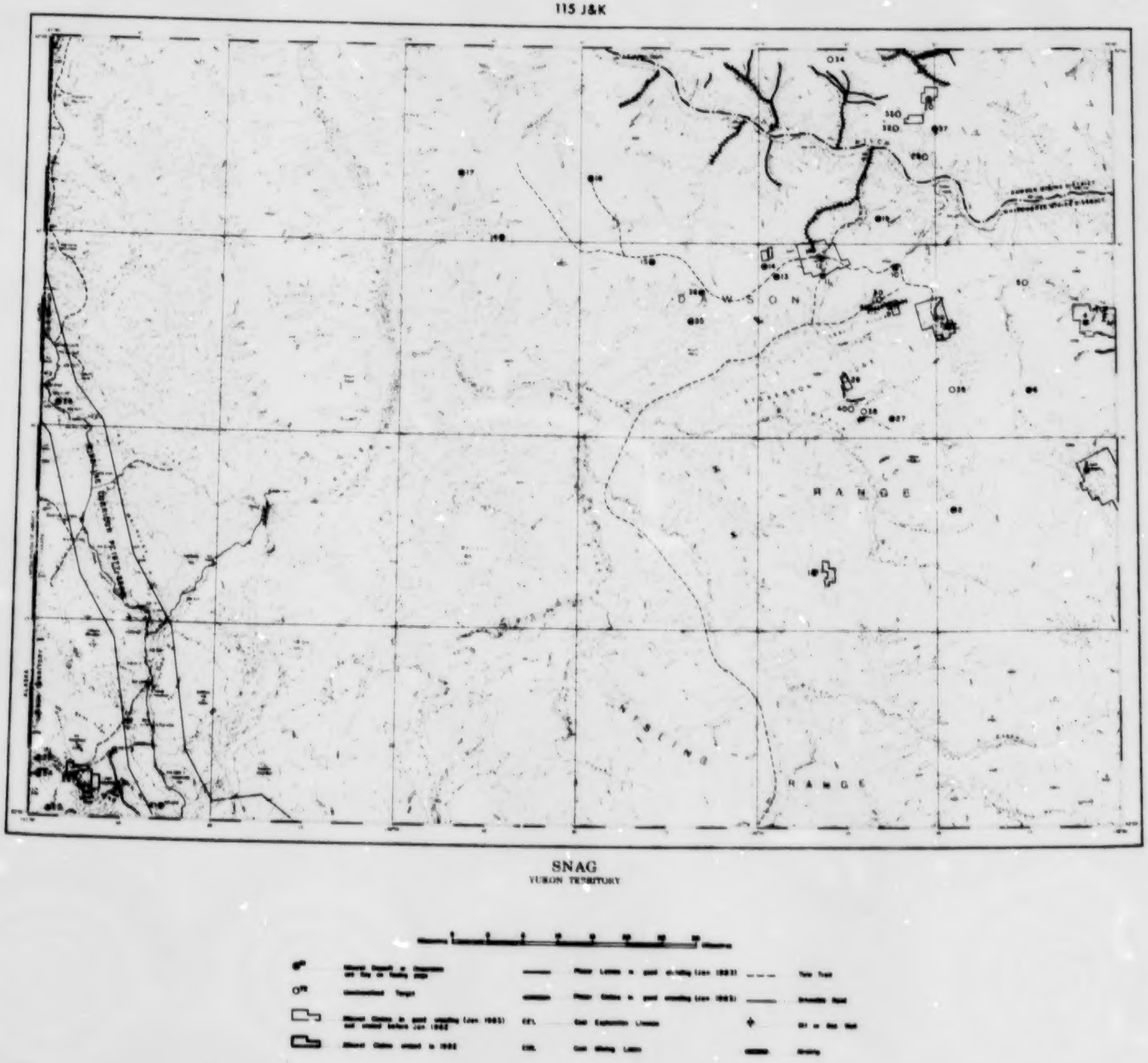
Claims 1982: TOOT 1-18

DOME 115 I 10 (80)
J. Kemp (62° 39'N,136° 44'W)

Claims 1982: DOME 1-16

******

NOTES


D A W S O N
R A N G E
N I S L I N G
R A N G E
ALASKA

115 J&K

SNAG
YUKON TERRITORY

SNAG MAP-AREA (NTS 115 J-K)

General Reference: GSC Map 10-1973 and Paper 73-41 by: D.J. Tempelman-Kluit, 1973.

NO.	PROPERTY NAME	REFERENCE
1	KLOT	Morin et al (1978, p. 72)
2	SOMME	Craig & Laporte (1972, p. 72)
3	PRIDE	Copper Vein
4	HAYES (SWEDE)	D.I.A.N.D. (1982, p. 22)
5	SELWYN	Bostock (1944)
6	CROCK	Craig & Laporte (1972, p. 68)
7	COCKFIELD	D.I.A.N.D. (1981, p. 265)
8	CO	D.I.A.N.D. (1981, p. 266)
9	RUDE CREEK	Craig & Laporte (1972, p. 63); Cockfield (1928, p. 11-13)
10	NORDEX	Silver-Lead Vein
11	BOMBER	Findlay (1967, p. 32-34)
12	CASINO	Craig & Laporte (1972, p. 55-57)
13	AZTEC	Craig & Laporte (1972, p. 54-55)
14	ZAPPA	D.I.A.N.D. (1981,p. 266,267)
15	BOREAL	Craig & Laporte (1972, p. 42-43)
16	BID	Craig & Laporte (1972, p. 38-39)
17	VINA	Craig & Laporte (1972, p. 35-37)
18	TONI TIGER	Craig & Laporte (1972, p. 40-41)
19	MARGUERITE	Craig & Laporte (1972, p. 51-52)
20	SCROGGIE	D.I.A.N.D. (1981, p. 266)
21	ONION	Nickel-Copper-Molybdenum Magmatic
22	NUTZOTIN	This Report
23	CALIFORNIA	Cairnes (1915, p. 123)
24	TRUDI	Copper-Molybdenum Porphyry
25	RIP	Cairnes (1915, p. 121-122)
26	BATRICK	Bostock (1952, p. 44-45)
27	PATTISON	Sinclair et al (1976, p. 146)
28	BRI	D.I.A.N.D. (1981, p. 267)
29	STEVENSON	D.I.A.N.D. (1981, p. 267)
30	LESLIE	D.I.A.N.D. (1981, p. 267)
31	CHAIR	D.I.A.N.D. (1981, p. 267); This Report
32	NEF	D.I.A.N.D. (1981, p. 267)
33	MK	D.I.A.N.D. (1981, p. 267)
34	HASL	D.I.A.N.D. (1981, p. 267)
35	DOYLE	Sinclair et al (1976, p. 147)
36	COFFEE	Sinclair et al (1976, p. 147)
37	3 2 MANY	Morin et al (1980, p. 26)
38	WHISKEY JOE	D.I.A.N.D. (1982, p. 221)
39	WOE	D.I.A.N.D. (1982, p. 221)
40	PAT	D.I.A.N.D. (1982, p. 221)

NUTZOTIN Copper Skarn
Skagway Moly Incorporated 115 K 2 (22)
(62°03'N,140°50'W)

References: D.I.A.N.D. (1982, p.222); D.I.A.N.D. (1981, p.265,267).

Claims: GOLD (36); RJ 1-16

Source: Summary by P. Watson from assessment report 091370 by A. Mullin and T. Kikuchi.

History:

In the late 1960's the property was examined and trenching and geophysical work programs were conducted. The GOLD claims were staked in 1980 and 1981 with the RJ claims added peripheral to the GOLD claims in 1982.

Description:

The property is located 10 km west of Milepost 1,175 on the Alaska Highway. It is underlain by Carbonaceous to Cretaceous shale, sandstone, conglomerate, limestone, andesite and dacite which have been intruded by a Cretaceous or younger granitic intrusion. Copper occurs in a calcareous epidote skarn, accompanied by magnetite and azurite, within chloritic rocks and serpentinized andesites.

Current Work and Results:

A 12.2 m chip sample collected in a trench on one of the two old showings returned a value 0.06% Cu. Old results such as 0.95% Cu with some Pb and Ag values over 1.8 m of gossan containing chalcopyrite were reported.

An EM-16 survey was conducted over 32.8 km of cut line. A medium to strong electromagnetic conductor up to 180 m long was reported over each showing, in the central part of the claim block.

******

1982 MINERAL CLAIMS STAKED

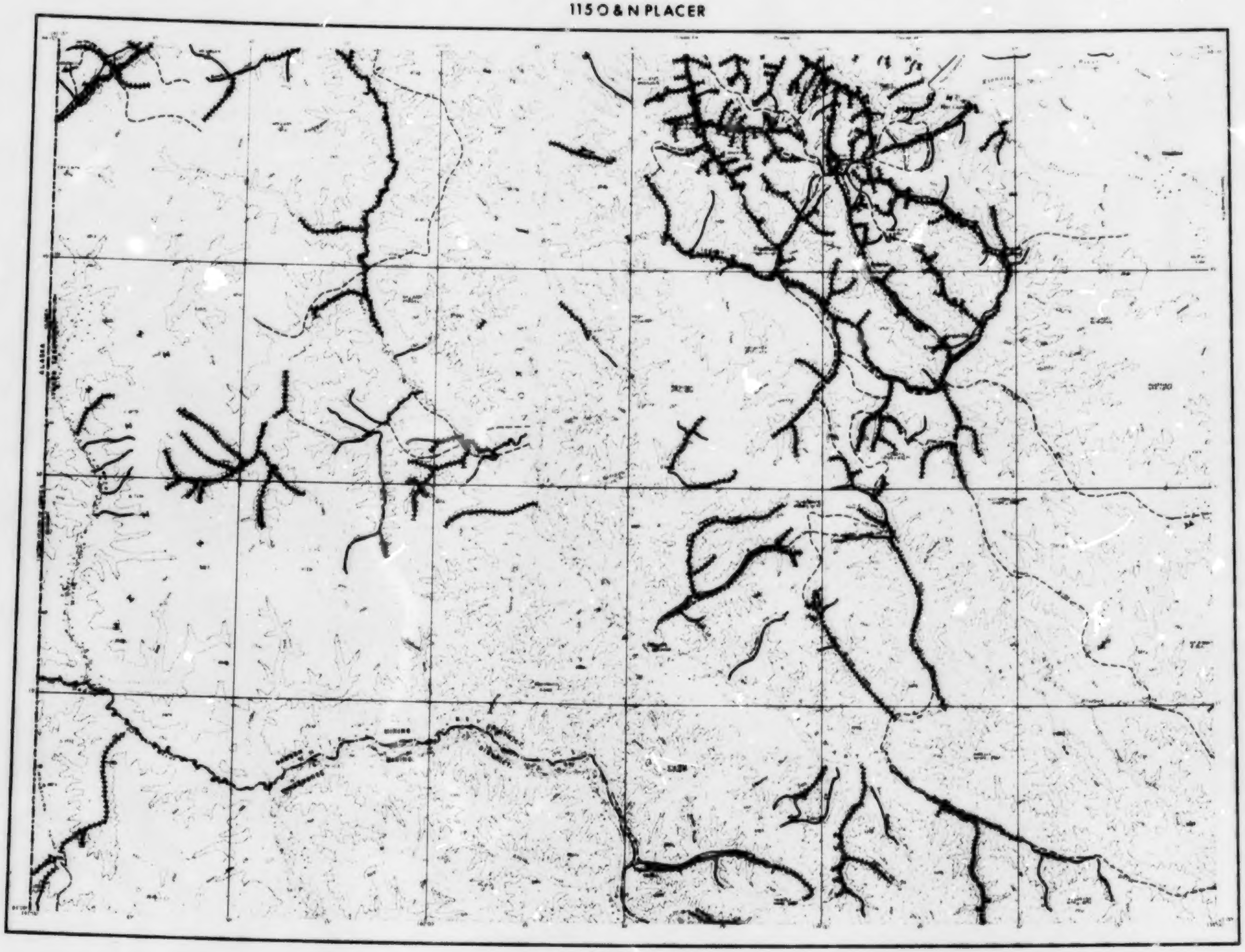
NUTZOTIN 115 K 2 (22)
Skagway Moly Inc. (62°03'N,140°52'W)

Claims 1982: GOLD 25-36; RJ 1-16

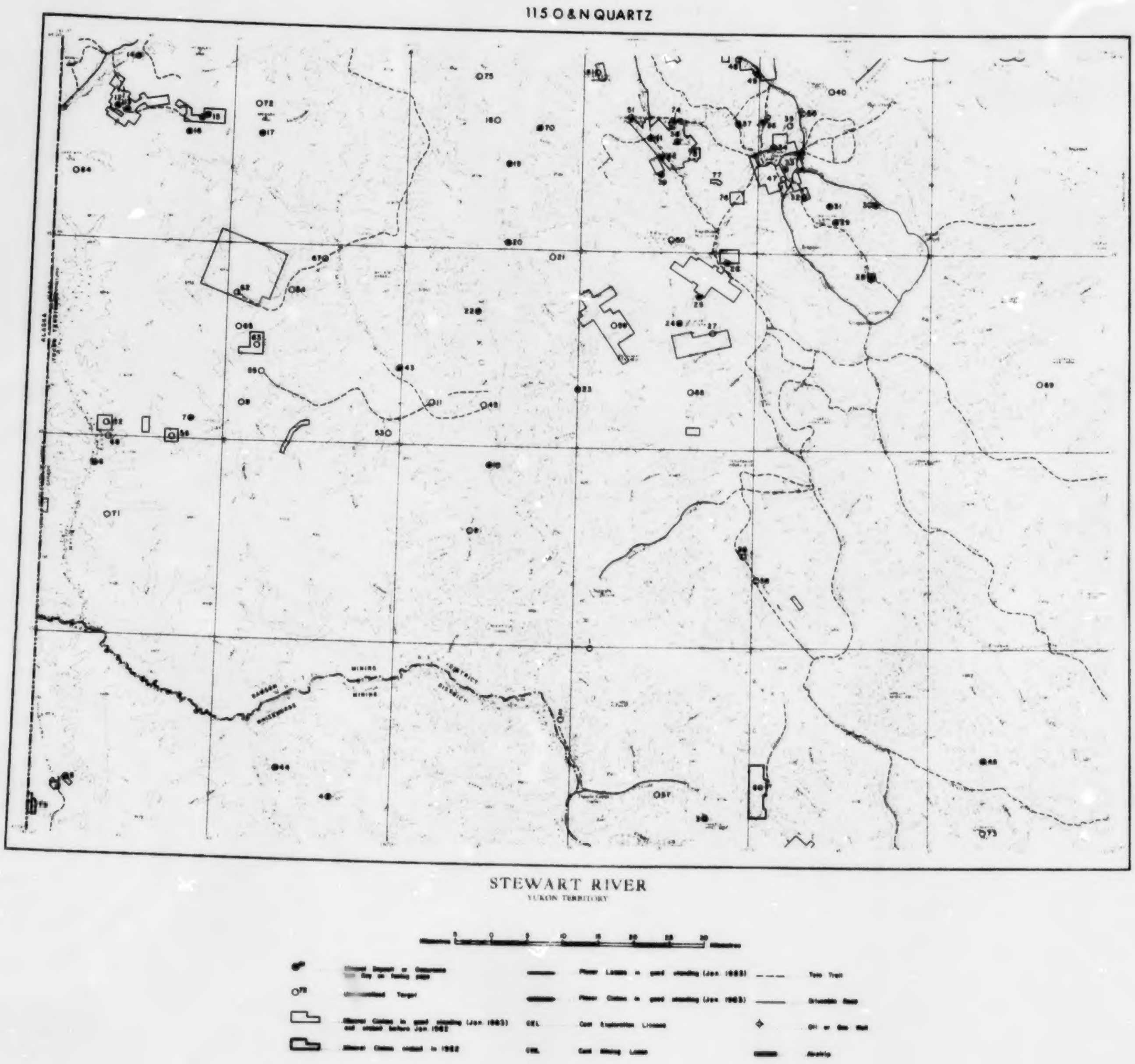
CHAIR 115 K 2 (31)
B. Hains (62°02'N,140°46'W)

Claims 1982: RAIN 1-4

115 O & N PLACER



STEWART RIVER
YUKON TERRITORY


115 O & N QUARTZ
STEWART RIVER
YUKON TERRITORY
Miles 5 0 5 10 15 20 25 30 Miles
Mineral Deposit or Occurrence Key on facing page
Unclassified Target
Mineral Claims in good standing (Jan. 1963) and staked before Jan 1962
Mineral Claims staked in 1962
Placer Leases in good standing (Jan. 1963)
Placer Claims in good standing (Jan. 1963)
CEL Coal Exploration Licence
CML Coal Mining Lease
Tote Trail
Driveable Road
Oil or Gas Well
Airstrip
ALASKA
YUKON TERRITORY
MINING DISTRICT

STEWART RIVER MAP-AREA (NTS (115 N-O)

General Reference: GSC Map 18-1973 and Paper 73-41 by: D.J. Tempelman-Kluit, 1974. GSC Map 711A by: H.S. Bostock, 1942 (for 115 O).

NO.	PROPERTY NAME	REFERENCE
1	TREVA	
2	NORTHERN LIGHTS	
3	BLACK FOX	Cairnes (1917, p. 33-34)
4	ARIES	Copper-Molybdenum Occurrence
5	MOOSEHORN	Morin et al (1977, p. 185)
6	LADUE	Copper-Molybdenum Occurrence
7	SANTA	Silver-Lead-Tin Vein
8	SVENN	Cockfield (1921, p. 52)
9	EXCELSIOR	Canada Dept. of Mines (1914, p. 121)
10	COMET	
11	TENMILE	McConnell (1902, p. 25-39)
12	LUBRA	Silver-Lead-Gold Vein
13	CONNAUGHT	D.I.A.N.D. (1982, p. 224)
14	PER	Cockfield (1921, p. 52); Green (1966, p. 26-28)
15	BUTLER	Cockfield (1919, p. 8); Craig & Laporte (1972, p. 32-34)
16	FIFTY	Skarn Copper
17	ENCHANTMENT	Tempelman-Kluit (1973, p. 48-49)
18	MONTE CHRISTO	
19	PICKERING	Canada Dept. of Mines (1914, p. 120)
20	INDIAN	Asbestos
21	BISHOP	
22	WOOD	Skarn Copper
23	BURMEISTER	D.I.A.N.D. (1981, p. 271)
24	HAYSTACK	Canada Dept. of Mines (1914, p. 205)
25	MCKINNON	Gold Stratabound
26	RAVEN	Morin *et al* (1980, p. 28)
27	FOTHERGILL	This Report
28	AIME	Gold Vein
29	GOLD RUN	Canada Dept. of Mines (1914, p. 83-85)
30	PORTLAND	Canada Dept. of Mines (1914, p. 101-104)
31	DOMINION	Canada Dept. of Mines (1914, p. 86-87)
32	LLOYD	Canada Dept. of Mines (1914, p. 76-82)
33	HUNKER DOME	This Report
34	MITCHELL	This Report
35	FAWCETT	Canada Dept. of Mines (1914, p. 107-111)
36	BUM	Gleeson (1970, p. 14-15); Craig & Milner (1975, p. 13)
37	BOX CAR	Canada Dept. of Mines (1914, p. 87-91); Gleeson (1970, p. 14)
38	LONE STAR	This Report
39	VIOLET	This Report
40	LEOTTA	
41	HILCHEY	D.I.A.N.D. (1981, p. 271,274)
42	BUCKLAND	Green & Godwin (1963, p. 19); Gleeson (1970, p. 16)
43	SUSTAK	Iron Vein
44	PROSPECT	Copper Occurrence
45	CRUIKSHANK	Coal
46	MCMICHAEL	Copper Occurrence
47	GOLDEN ROD	
48	HEFFRING	
49	TRILBY	
50	TORRANCE	
51	BALD EAGLE	
52	STEVO	D.I.A.N.D. (1981, p. 271)
53	FLUME	D.I.A.N.D. (1981, p. 274)
54	TYRRELL	D.I.A.N.D. (1981, p. 274)
55	SNIP	D.I.A.N.D. (1981, p. 274)
56	DOLE	D.I.A.N.D. (1981, p. 274)
57	THIS	D.I.A.N.D. (1981, p. 274)
58	MAISY	D.I.A.N.D. (1981, p. 274)
59	RUBY	D.I.A.N.D. (1981, p. 274)
60	HUNK	D.I.A.N.D. (1981, p. 274)
61	MT. BRONSON	D.I.A.N.D. (1981, p. 272,274)
62	JOVE	D.I.A.N.D. (1981, p. 272-273)
63	SON	D.I.A.N.D. (1981, p. 273)
64	CRAG	D.I.A.N.D. (1981, p. 273)
65	DOORMAT	D.I.A.N.D. (1981, p. 273)
66	BISMARK	Morin et al (1977, p. 138-139)
67	HEC-TOR	Morin *et al* (1980, p. 27)
68	BORD	Morin *et al* (1980, p. 27)
69	LIL	Morin *et al* (1980, p. 27)
70	RON	Morin *et al* (1980, p. 28)
71	BUD	D.I.A.N.D. (1982, p. 224)
72	MT. HART	D.I.A.N.D. (1982, p. 224)
73	PYROXENE	D.I.A.N.D. (1982, p. 224)
74	CIM	D.I.A.N.D. (1982, p. 224)
75	HUNG	D.I.A.N.D. (1982, p. 224)
76	READFORD	D.I.A.N.D. (1982, p. 224)
77	EVING	D.I.A.N.D. (1982, p. 224)
78	ORO	D.I.A.N.D. (1982, p. 224)
79	LODE	This Report
80	DL	This Report

FOTHERGILL

Eldor Resources Limited 115 O 11 (27) (63°38'N,139°10'W)

References: D.I.A.N.D. (1982, p.224); Canada Dept. of Mines (1914, p.71-74).

Claims: HAY 1-97

Source: Summary by K. Grapes from assessment report 091406 by R.D. Cruickshank.

Description:

The HAY claims are underlain by Tertiary rhyolite, andesite and clastic sedimentary rock, which unconformably overly the Yukon Cataclastic Terrane.

Current Work and Results:

The 1982 program consisted of detailed stream-water and sediment sampling, reconnaissance soil and rock sampling, and geological mapping.

******

MITCHELL, HUNKER DOME Gold Vein
Lindex Exploration 115 O 15 (33,34)
Limited (63°52'N,138°56'W)

References: Canada Dept. of Mines (1914, p.107-111); Gleeson (1970, p.16-17).

Claims: KING SOLOMON 1-36; DOMINION 1-4; SHEBA 1

Source: Summary by K. Grapes from assessment report 091384 by W.G. Stevenson.

History:

In 1915, a shaft was sunk approximately 1.6 km southeast of Solomon Dome. A tunnel was driven 457 m to the north to intersect mineralization reportedly exposed in the shaft. These workings are located near the southeastern part of the property. At about the same time the Mitchell Syndicate put down a shaft approximately 24.38 m deep, 0.8 km north of Sheba Dome. In 1967, a block of 33 claims was staked over the northeast slope of King Solomon Dome and acquired by the Thornburg Mining Company. In 1977, the claims were optioned by Orekon Limited, who mapped narrow discontinuous stringers and quartz veins containing silver-lead mineralization. In 1980 an airborne geophysical survey was conducted over the property. The claims lapsed and were restaked by Orekon/Lindex Exploration Limited in 1980.

Description:

The Lindex mineral claim group is located 41 km southeast of Dawson, on Sheba Dome, on the northeastern slope of King Solomon Dome.

The property is underlain by fairly flat-lying quartz mica schist. Within the schist are quartz lenses, quartzite and limestone beds. Bulldozer trenching conducted since 1966 has revealed two northerly trending quartz vein systems which can be traced over a distance of 914 m. Some of these veins contain visible galena and other sulphides.

Current Work and Results:

In 1981, 36 rock samples were collected and assayed. Best values returned from samples of quartz-mica-schist were 1.57 g Au/t and 30.51 g Ag/t. Samples of quartz vein returned values of up to 6,000 g Ag/t across 0.31 m, and 3.22 g Au/t over 0.36 m. Samples from a small stockpile of handsorted material in the Sheba trench assayed 3.50 g Au/t, 12,783 g Ag/t, 1.43% Cu, 28.85% Pb and 0.65% Zn.

******

LONE STAR (RJ) Gold Vein
Dawson Eldorado Gold 115 O 14 (38)
Explorations Ltd. (63°54'N,139°14'W)

References: D.I.A.N.D. (1982, p.223-224); Gleeson (1970, p.15-16).

Claims: RJ 1-32; AC 1-12; DE 1-14; ND 1-22; DN 1-33; VICTORIA; ESTHER EDNA; NEW BONANZA 1-2; NIOBE FRACTION; LONE STAR; ZULU CHIEF; SWASTIKA; UDAD; CATO; THISTLE

Source: Summary by K. Grapes from assessment report 091064 by P.S. White.

History:

The property was discovered by placer miners in 1897 and from 1898 to 1908 the property was prospected, pitted and staked. In 1909-1914 Lone Star Ltd. developed the property and went into production until World War One, averaging 5.14-6.86 g Au/t. Consolidated Lone Star Limited explored near the old mine from 1929 to 1936. During 1946 and 1947, churn drilling and underground work was conducted by Yukon Consolidated Gold Corporation. Little else was done until 1960-1962 when Klondike Lode Gold Mines Ltd. trenched and soil panned the property. A shallow drill program was unsuccessful. In 1979 Dawson Eldorado Gold Explorations Ltd. began additional exploration work on the property.

Description:

The Lone Star property is located on the Lone Star Ridge between Bonanza and Eldorado Creeks, 35 km south of Dawson. It is underlain by Klondike Schist, mainly quartz-feldspar-sericite schist with micaceous quartzite interbeds, chlorite-muscovite rich layers and quartz lenses.

Current Work and Results:

During the summer of 1981, 58 quartz claims were staked and 70 line-km of grid were cut. The property was prospected, geochemically sampled (soil and rock) and trenched. Road and building rehabilitation programs were also undertaken. The property was photographed from two altitudes and orthophotographic base maps were made.

Five hundred soil samples were collected and analyzed for gold, silver, lead and antimony. Nine gold anomalies (25 ppb Au) were delineated.

Ten bulldozer trenches were excavated and sampled for future analysis. Fine visible gold was reported in samples taken from a trench in the area of the Eldorado Dome workings.

******

VIOLET Gold Vein
Ebony Resources Ltd. 115 O 4 (39)
(63°51'N,139°17'W)

Reference: D.I.A.N.D. (1982, p.223-224); Gleeson (1970, p.17).

Claims: VI 1-15

Source: Summary by K. Grapes from assessment report 091399 by P.S. White.

History:

The VIOLET, RUTH, PEACOCK and HOMESTAKE claims were staked in 1901 by Violet Mining Co. Ltd. By 1907 the company had completed a 23.4 m adit on the PEACOCK claim and two shafts on the HOMESTAKE claim. Sixty thousand dollars was spent on the VIOLET claims for development work which included three shafts, 91.44 m of drifting, an open cut and a 1,067 m long tramway to a cyanide mill on Ophir Creek. In 1905, 4.54 tonnes of ore were treated at the mill and in 1906, 1.36 tonnes in 1906.

The claim group was leased by Ophir Mining Syndicate around 1906. It was restaked as the OPHIE claims in 1947 and as the VI claims in 1981.

Description:

The claims are located approximately 16 km southeast of Dawson City, southeast of Eldorado Creek, 1.6 km southwest of the mouth of Gay Gulch. The property covers an assemblage of barite, gold and minor pyrite-galena bearing quartz veins cutting siliceous sericite-schist. The largest vein, 1.2-1.8 m wide, has been traced for several hundred metres.

Sampling of the surface trenches and dumps indicate low grade values with occasional exceptions. Samples from the main shaft dump analyzed in 1914 returned values such as 1.37 g Au/t with 3.43 g Au/t and 10.29 g Ag/t with 3.43 g Ag/t.

Current Work and Results:

The property was examined by P. White in 1979, 1980 and 1981. In 1981, aerial photographs were taken of the property.

******

1982 MINERAL CLAIMS STAKED

LODE 115 N 2 (79)
R. Jury (63°01'N,140°59'W)

Claims 1982: LODE 1-6

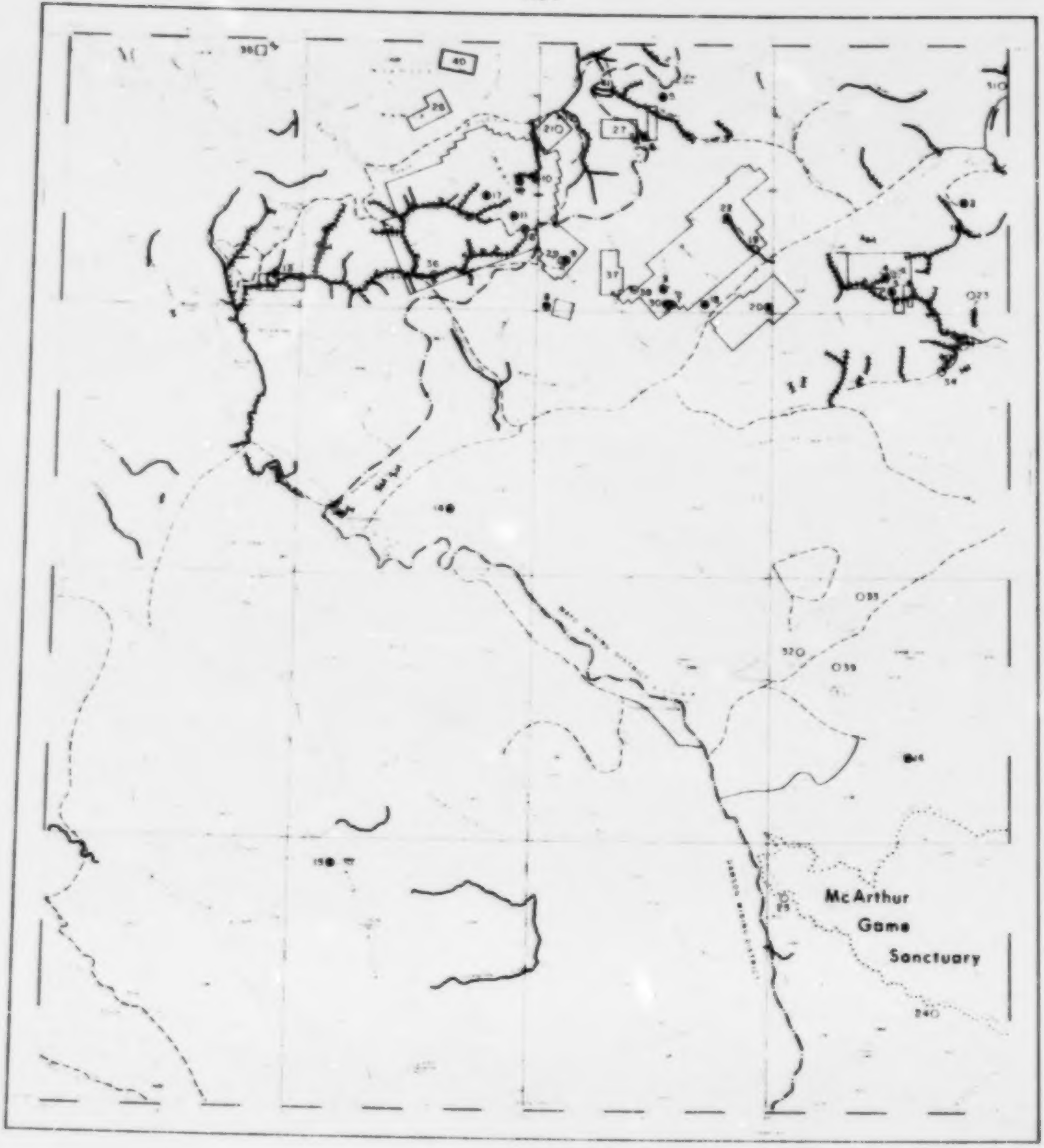
DL 115 O 2 (80)
M. Woods (63°04'N,138°58'W)

Claims 1982: DL 1-72

******

NOTES

115 P


McArthur
Game
Sanctuary
40
26
21
27
37
20
19
22
51
52
53
33
24
25
16
15
14

McQUESTEN

YUKON TERRITORY

Kilometres
Kilometres
Mineral Deposit or Occurrence and Map or Index Number
Unevaluated Target
Mineral Claims in good standing (Jan 1983) and staked before Jan 1982
Mineral Claims staked in 1982
Placer Leases in good standing (Jan 1983)
Placer Claims in good standing (Jan 1983)
CEL Coal Exploration Licence
CML Coal Mining Lease
Tote Trail
Gravelled Road
Oil or Gas Well
Airstrip

McQUESTEN MAP-AREA (NTS 115 P)

General Reference: GSC Map 1143A by: H.S. Bostock, 1942.

NO.	PROPERTY NAME	REFERENCE
1	JAYBEE	Silver-Lead Vein
2	SEATTLE	Green & Godwin (1964, p. 16)
3	HAWTHORNE	Green (1966, p. 20-21); Bostock (1941, p. 33-34)
4	SCHEELITE DOME	This Report
5	HOBO	D.I.A.N.D. (1981, p. 227)
6	SPRAGUE	Bostock (1948, p. 11)
7	EAST RIDGE	This Report
8	LUGDUSH	This Report
9	RIDGE	D.I.A.N.D. (1981, p. 278)
10	JOSEPHINE	This Report
11	RHOSGOBEL	This Report
12	PUKELMAN	This Report
13	CLEAR CREEK	Lang (1951, p. 14)
14	MOOSE RIDGE	Silver-Lead-Iron Occurrence
15	ROSEBUD	Bostock (1948, p. 12)
16	SETHER	
17	LEWIS	This Report
18	BOULDER	Bostock (1948, p. 11)
19	TOTH	
20	EPD	This Report
21	MOZI	D.I.A.N.D. (1981, p. 279)
22	SP	This Report
23	BEN	D.I.A.N.D. (1981, p. 279-280)
24	WOODBURN	D.I.A.N.D. (1981, p. 280)
25	CROOKED	D.I.A.N.D. (1981, p. 280)
26	FIONA	D.I.A.N.D. (1982, p. 229)
27	MAHTIN	D.I.A.N.D. (1982, p. 229-230)
28	JUBJUB	D.I.A.N.D. (1982, p. 228)
29	JABBERWOCK	D.I.A.N.D. (1982, p. 230)
30	MAY CREEK	Morin et al (1980, p. 23)
31	SECRET CREEK	Morin et al (1980, p. 23)
32	WINSLOW	D.I.A.N.D. (1982, p. 231)
33	PAN	D.I.A.N.D. (1982, p. 231)
34	SAVY	D.I.A.N.D. (1982, p. 231)
35	ACE	This Report
36	MARY	This Report
37	BANDER	D.I.A.N.D. (1982, p. 230)
38	SNATCH	D.I.A.N.D. (1982, p. 231)
39	LJB	This Report
40	OMEGA	This Report
41	NIC	This Report

SCHEELITE DOME
Aber Resources Limited

Tungsten Skarn
115 P 16 (4)
(63°47'N,136°15'W)

Reference: D.I.A.N.D. (1981, p.277).

Claims: SUN 1-106

Source: Summary by K. Grapes from assessment report 091024 by R.V. Beavon.

Current Work and Results:

Nine trenches over a strike length of 190 m were stripped and blasted to an average depth of 0.8 m. The trenches were sampled and assayed for gold and tungsten. The best values reported were 5.4 g Au/t over 3 m and 6.32 g Au/t over 1.5 m. Assays over 1.5 m also returned up to 4,800 ppm W.

******

EAST RIDGE

Billiton Canada Limited;
Campbell Resources
Incorporated;
Inco Limited

Tin, Lead, Zinc,
Silver
115 P 15 (7)
(63°47'N,136°44'W)

Reference: D.I.A.N.D. (1982, p.227-228).

Claims: SNARK 1-252; TEE 1-8

Source: Summary by K. Grapes from assessment report 091018 by B. Paul and D. Rota.

Current Work and Results:

A wide area of anomalous (greater than 50 ppm) tin values in soil was outlined on the TEE claims in 1979 and 1980. In 1981 these anomalies were followed-up with detailed prospecting and mapping. Several additional occurrences of cassiterite were discovered including one showing in outcrop. All of these occurrences appear to be spatially associated with the Molar Granodiorite.

******

LUGDUSH

Canada Tungsten Mining
Corporation Limited

Tungsten Skarn
115 P 15 (8)
(63°45'N,136°56'W)

Reference: D.I.A.N.D. (1982, p.135,227,231).

Claims: SPUD 1-16

Source: Summary by K. Grapes from assessment report 091082 by R.H. Rainbird.

History:

In 1971, the North Stewart River Joint Venture (Canada Tungsten Mining Corporation Limited and Chevron Standard Ltd.) staked the property as the LUGDUSH 1-16 claims. A program of stream sediment and soil sampling outlined a zone of tungsten-bearing skarn. No further work was conducted and the claims were allowed to lapse. The area was restaked as the HOP 1-30 claims in 1979 by Amax of Canada Ltd. The ground came open in 1980. In 1981 the SPUD claims were staked by Canada Tungsten Mining Corporation Limited.

Description:

The SPUD claims are located at the headwaters of Vancouver Creek, about 60 km west of Mayo. The property is underlain by a thick sequence of Lower Cambrian "Grit Unit" phyllite, argillite, quartzite and minor marble. These rocks have been intruded by quartz monzonite, quartz diorite, quartz-feldspar porphyry and andesite. The metasedimentary rocks have been altered to quartz-biotite-rich hornfels and tungsten bearing calc-silicate hornfels adjacent to intrusions.

Current Work and Pesults:

The 1982 program focused on 1:5,000 scale geological mapping and selected soil, rock and heavy mineral sampling to outline the extent, structure and economic potential of tungsten bearing calc-silicate skarns.

Skarn assemblages in the area include: pyroxene-quartz-calcite, garnet-epidote, pyroxene-garnet and wollastonite-quartz-calcite skarn. Mineralization is confined primarily to tungsten bearing skarns within calc-silicate hornfels. The garnet bearing skarns contain little or no tungsten.

The largest and most prominent skarn on the property is about 800 m long with an apparent thickness of between 150-200 m, and a grade of less than 0.1% WO_3 which increases slightly, further from the intrusive contact. Higher grade samples, containing up to 2.18% WO_3, were obtained from a 0.2 m thick bed of scheelite bearing biotite-quartz hornfels. Galena bearing quartz vein material has been found in talus within 500 m of the intrusive contact.

A total of 17 soil, 5 rock and 4 panned heavy mineral concentrate samples were collected. Soil and heavy mineral geochemistry indicate a possible bedrock source for tungsten and possibly tin in a 200-300 m wide band of calc-silicate skarn trending northeast from the intrusive contact. Rock chip samples returned low values (less than 0.05% WO_3) except for a sample of coarse biotite skarn (2.18% WO_3). One of the two showings of galena-bearing quartz assayed 8% Pb and 644.55 g Ag/t.

******

CLEAR CREEK EAST (WEST RIDGE) (LEWIS, RHOSGOBEL, JOSEPHINE, PUKELMAN, MARY)

Canada Tungsten Mining
Corporation Limited

115 P 14, 15
(10,11,12,17,36)
(63°47'- 63°56'N,
136°57'-137°20'W)

Reference: D.I.A.N.D. (1982, p.8,127,228,231).

Claims: CC 1-919; SLUGGO 1-20; RAIN 1-30; BEE 1-14

Source: Summary by K. Grapes from assessment report 091368 by R.H. Rainbird.

Current Work and Results:

The 1982 exploration program on the CC 782-919 claims involved 1:10,000 scale geological mapping and geochemical soil, rock, and heavy mineral sampling. A total of 170 soil samples and one heavy mineral sample were collected and analyzed for W, Sn, and Au. All samples returned low values.

******

EPD
Billiton Canada Limited;
Campbell Resources
Incorporated;
Inco Limited

Tin Breccia
115 P 10,15,16
(20)
(63°45' - 63°47'N,
136°27'- 136°30'W)

Reference: D.I.A.N.D. (1982, p.227,229), Emond (This Report).

Claims: EPD 1-84; LAMB 1-26; FLAG 1-12

Source: Summary by K. Grapes from assessment report 091015 by D. Rota.

Current Work and Results:

During 1981, eight HQ drill holes totalling 1,525.3 m were drilled. All holes intersected mineralization. The best intersections assayed 0.94% Sn and 11.83 g Ag/t over 3.70 m and 2.45% Sn and 2.10 g Ag/t over 0.95 m. Mineralization occurs as cassiterite and sphalerite in quartz-chlorite breccias and dark green chlorite-actinolite "greenstones".

******

SP
Pacific Ridge Resources
Corporation

Tin Target
115 P 15 (22)
(63°50'N,136°35'W)

Reference: D.I.A.N.D. (1981, p.279).

Claims: A 1-128; SP (63)

Source: Summary by K. Grapes from assessment report 091070 by T.G. Hawkins.

Current Work and Results:

In the fall of 1981, 33 pan concentrate samples were collected and analyzed for gold, tin, tungsten with selected samples analyzed for copper, lithium, cobalt and tantalum. Results of the survey indicate generally low values in gold, (0.069 g Au/t or less) and tin values of up to 0.26%.

******

ACE
L. Doey

115 P 13 (35)
(63°59'N,137°36'W)

Reference: D.I.A.N.D. (1982, p.227,231)

Claims: ACE 1-4

Source: Summary by K. Grapes from assessment report 090940 by L. Nagy and L. Doey.

Current Work and Results:

In 1982, twenty-five soil, one rock and one rock chip sample were collected and analyzed for Cu, Pb, Zn, and Ag. Soil values range from 10 - 91 ppm Cu, 7 - 25 ppm Pb, 45 - 755 ppm Zn and 0.2 - 2.6 ppm Ag. A sample of black argillite contained 40 ppm Cu, 9 ppm Pb, 340 ppm Zn and 0.7 ppm Ag. A rock chip sample of black carbonaceous shale returned values of 385 ppm Cu, 22 ppm Pb, 7,800 ppm Zn and 9.0 ppm Ag over 3 m.

******

1982 MINERAL CLAIMS STAKED

LJB
L.J. Brown

115 P 8 (39)
(63°25'N,136°21'W)

Claims 1982: LJB

OMEGA
Noranda Exploration Company
Limited

115 P 14 (40)
(63°59'N,137°10'W)

Claims 1982: OMEGA 1-32

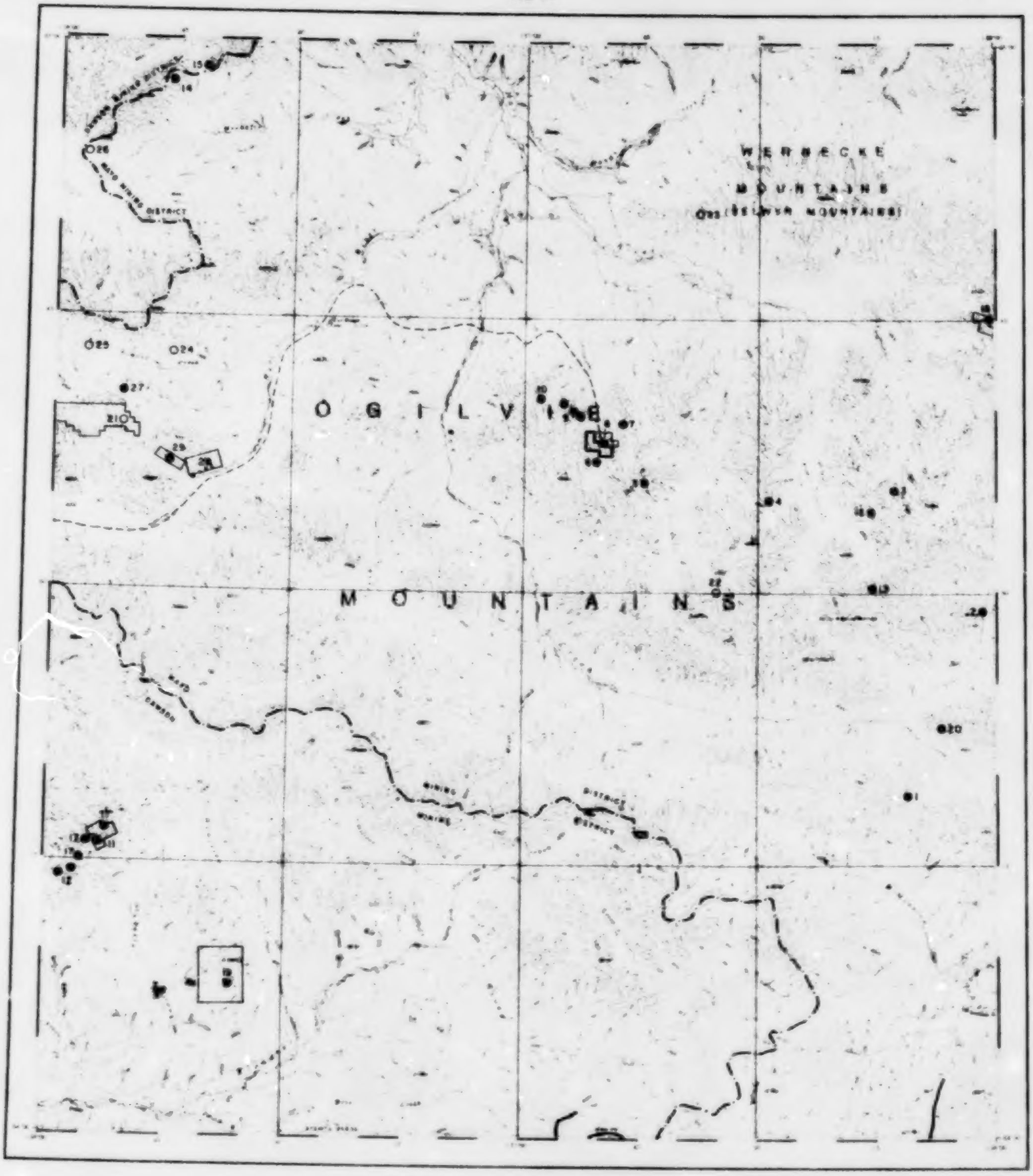
NIC
E. Wiez

115 P 15 (41)
(63°57'N,136°51'W)

Claims 1982: NIC 1-4

******

116 A


WERNECKE
MOUNTAINS
(SELWYN MOUNTAINS)
OGILVIE
MOUNTAINS
MAYO MINING DISTRICT
DAWSON MINING DISTRICT
MINING DISTRICT
25
24
27
26
23
22
20
21
11
12
13
14
15
16
18
19
1
2
3
4
5
6
7
8
9
10

LARSEN CREEK
YUKON TERRITORY

Kilometres 5 0 5 10 15 20 25 30 Kilometres

● Mineral Deposit or Occurrence see Key on facing page
○72 Unmineralized Target
Mineral Claims in good standing (Jan 1983) and staked before Jan 1982
Mineral Claims staked in 1982
Placer Leases in good standing (Jan 1983)
Placer Claims in good standing (Jan 1983)
CEL ...... Coal Exploration License
CML ...... Coal Mining Lease
– – – ...... Tote Trail
...... Driveable Road
◇ ...... Oil or Gas Well
...... Airstrip

LARSEN CREEK MAP-AREA (NTS 116 A)

General Reference: GSC Map 1283A and Memoir 364 by: L.H. Green, 1972.

NO.	PROPERTY NAME	REFERENCE
1	TIMBERWOLF	Copper Vein
2	WORM	Copper Vein
3	RAMA	Copper-Silver-Lead Vein
4	MATTSON	Copper Vein
5	SOUP	Copper Vein
6	REINDEER	Copper-Lead
7	GRACE	Craig & Laporte (1972, p. 26-27)
8	HART RIVER	Morin *et al* (1979, p. 22-24); *This Report*
9	BELCARRA	Copper-Lead-Zinc Vein
10	ZEBRA	Green (1972, p. 140); Craig & Laporte (1972, p. 23-25)
11	HAMILTON (MIKE)	This Report
12	RIMROCK	D.I.A.N.D. (1982, p. 233)
13	AUSTON	Green (1972, p. 140)
14	HOT	Sinclair *et al* (1976, p. 82)
15	MICHELLE	Sinclair *et al* (1975, p. 71)
16	BRUK (VUG)	Sinclair *et al* (1976, p. 74)
17	PHILP	Morin *et al* (1977, p. 139-140)
18	DALE	D.I.A.N.D. (1982, p. 233); This Report
19	IDA	D.I.A.N.D. (1982, p. 234)
20	STROKER	D.I.A.N.D. (1982, p. 234)
21	ST. BRIDGET	This Report
22	SUMI	Morin et al (1977, p. 135)
23	WERN	Morin *et al* (1977, p. 135-136)
24	TIM	Morin *et al* (1979, p. 50)
25	SHAY	Morin *et al* (1979, p. 50)
26	LEP	Morin *et al* (1979, p. 50)
27	LOMOND CREEK	Morin *et al* (1979, p. 49)
28	BOYLE	This Report
29	MILK UM	This Report

HAMILTON (MIKE)

S. Young

Gold, Silver, Cobalt
116 A 5 (11)
(64°15'N,137°55'W)

References: D.I.A.N.D. (1982, p.222-224); Morin *et al* (1977, p.139-140).

Claims: AINE 1-24

Source: Summary by K. Grapes from assessment report 091446 by D.P. Taylor.

History:

In 1975 the property was staked as the MIKE and CAN claims by Canalta Resources Limited. The property was explored by trenching and diamond drilling which delineated two easterly trending gold mineralized zones. The claims were allowed to lapse. The AINE claims were staked in 1981 to cover known showings.

Current Work and Results:

The two mineralized zones delineated by Canalta Resources were further investigated and sampled in 1982. Samples from the north zone returned values ranging from 0.103 g Au/t to 15.02 g Au/t and 0.27% Co.

******

DALE
Noranda Exploration Limited
Copper
116 A 9,16,
106 D 12,13 (18)
(64°45'N,135°58'W)

Reference: D.I.A.N.D. (1982, p. 233).

Claims: MELA; DALE; (66)

Current Work and Results:

The eastern part of the claim block was mapped at 1:10,000 scale in 1982. Chalcopyrite-bearing quartz-siderite veins were found cutting Precambrian phyllites.

******

ST. BRIDGET
Milchem Canada Limited
Barite
116 A 12 (21)
(64°38'N,137°48'W)

Reference: D.I.A.N.D. (1982, p. 233-234).

Claims: ST. BRIDGET (114)

Source: Summary by K. Grapes from assessment report 091366 by T.G. O'Neill.

History:

The ST. BRIDGET claims were staked in 1981 to cover an 11 km long trend of barite mineralization. Of the 135 claims originally staked, 21 were not renewed.

Description:

The claims are located 25 km east of Kilometre 93 on the Dempster Highway, 100 km northeast of Dawson. The property is underlain by Road River Formation and Upper and Lower Earn Group rocks.

Current Work and Results:

During July 1982 the claims were geologically mapped.

Twelve outcrops of grey, bedded barite and two areas of mineralized float were located, along a distance of 2.5 km. The barite mineralization occurs in black siliceous shales of the Canol Formation (Lower Earn Group). Mineralization occurs in zones of up to three beds varying in thickness from 0.51 m to 4.6 m and pinching out altogether in some areas. Individual barite beds range from 0.05 m to 3.0 m in thickness.

The barite is usually light to dark grey, and interlaminated with chert beds less than 1 mm thick. Witherite often occurs as discrete interlaminations with barite, and occasionally in pods up to 1.25 m long and 0.9 m wide. Specific gravity of the barite varies from 2.90 to 4.25.

Fourteen stream sediment samples were collected and tested for lead, zinc and barite. Lead values ranged from 6 to 20 ppm Pb, zinc from 675 to 1,050 ppm Zn and barium from 450 to 1,475 ppm Ba. None of the lead or zinc samples had values greater than the regional threshold values.

******

BOYLE
Cominco Ltd.
Barite Stratiform
116 A 12 (28)
(64°37'N,137°40'W)

Reference: D.I.A.N.D. (1982, p.233-234).

Claims: BOYLE (32)

Source: Summary by K. Grapes from assessment report 091040 by E.G. Olfert.

History:

The BOYLE claims were staked in August 1981 to cover an area of stratiform barite mineralization in outcrop and talus.

Description:

The property is located on the West Hart River, 34 km east of the Dempster Highway and 240 km northwest of Mayo. The claims are underlain by a 500-1,000 m thick sequence of graptolitic shale, silty mudstone and basic volcanic rock of the Road River Formation. This unit is structurally bounded by two sections of massive, grey Cambro-Ordovician carbonate rock. The Dawson Thrust occurs along the northern edge of the property with en echelon thrusts and associated drag folds occurring further south on the property.

Current Work and Results:

Geological mapping on a scale of 1;10,000, and soil, stream sediment and rock geochemical sampling were carried out.

A total of 125 soil, rock and stream sediment samples were collected and analyzed for Pb, Au and Ba. Half the samples were also analyzed for Cu and Ag.

******

MILK UM
Milchem Canada Limited
Barite
116 A 12 (29)
(64°37'N,137°45'W)

Reference: D.I.A.N.D. (1982, p.234. see NO BEAVER).

Claims: MILK UM (15)

Source: Summary by K. Grapes from assessment report 091381 by T.G. O'Neill.

History:

The MILK UM claims were staked in August 1981 to cover part of a 16.5 km long barite trend. Of the 55 claims originally staked, 41 have lapsed.

Description:

The MILK UM claims are located 105 km northeast of Dawson City, 30 km east of the Dempster Highway. The claims are underlain by rocks of the Selwyn Basin ranging in age from late Proterozoic to early Mississippian.

Current Work and Results:

The claims were geologically mapped and 10 stream sediment samples were collected in July 1982.

One barite outcrop occurs on the claims. The barite is massive with no laminations or witherite inclusions. The outcrop measures 3 m long by 1 m thick. A sample of the barite bed had a specific gravity of 4.0.

The 10 stream sediment samples collected were tested for Pb, Zn, and Ba. Lead values ranged from 8-20 ppm Pb, zinc from 375-2,140 ppm Zn and barium from 200-2,350 ppm Ba.

******

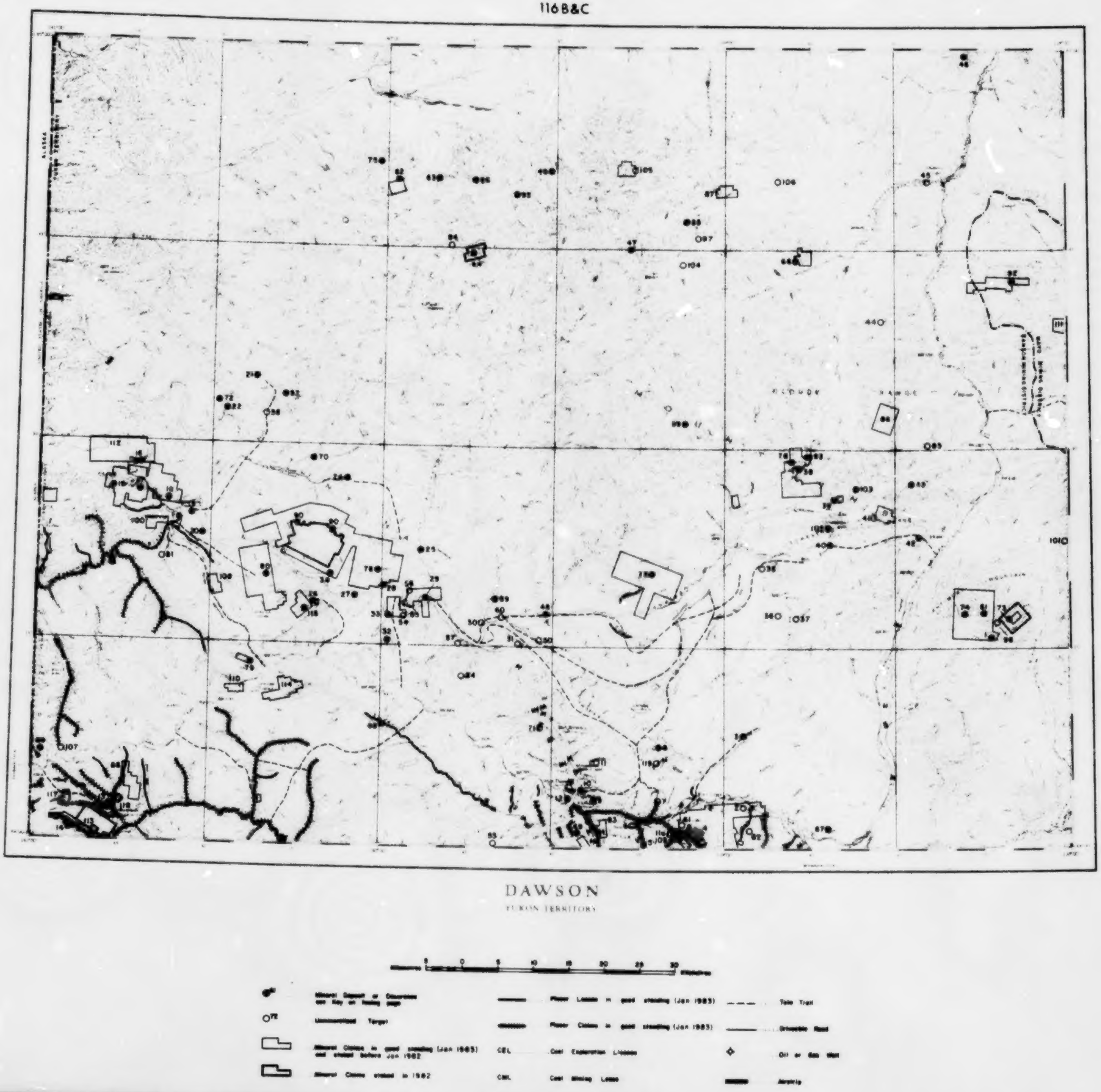
1982 MINERAL CLAIMS STAKED

HART RIVER	116 A 10	(8)
North Hart Resources Ltd.	(64°38'N,136°50'W)	

Claims 1982: GEN 1-16

******

116B&C


DAWSON
YUKON TERRITORY
Kilometres 5 0 5 10 15 20 25 30 Kilometres
Mineral Deposit or Occurrence see Key on facing page
Unclassified Target
Mineral Claims in good standing (Jan 1983) and staked before Jan 1982
Mineral Claims staked in 1982
Placer Leases in good standing (Jan 1983)
Placer Claims in good standing (Jan 1983)
CEL Coal Exploration Licence
CML Coal Mining Lease
Tote Trail
Driveable Road
Oil or Gas Well
Airstrip
MAYO MINING DISTRICT
DAWSON MINING DISTRICT
CLOUDY RANGE
ALASKA
YUKON TERRITORY

DAWSON MAP-AREA (NTS 116 B-C)

General Reference: GSC Map 1284A and Memoir 364 by: L.H. Green, 1972.

NO.	PROPERTY NAME	REFERENCE
1	INDEX	Green (1972, p. 142)
2	GERMAINE	Green (1965, p. 64-65)
3	COLLIERY	Bostock (1938, p. 13-14); Green (1972, p. 27); Dowling (1915)
4	UNEXPECTED	D.I.A.N.D. (1982, p. 238)
5	VIRGIN	Canada Dept. of Mines (1914, p. 41-49); D.I.A.N.D. (1981, p. 293)
6	MacLEAN	Canada Dept. of Mines (1914, p. 125)
7	BOYLE	
8	LEPINE	Canada Dept. of Mines)1914, p. 114-115); D.I.A.N.D. (1981, p. 293)
9	FIBRE	Asbestos
10	MIDNIGHT DOME	Asbestos
11	BROAD-LEDGE	Brock (1910, p. 15)
12	WEST DAWSON	Copper-Lead-Silver Skarn, Vein
13	HUNGRY	Cockfield (1921, p. 52)
14	MILLER	Cockfield (1921, p. 51-52); D.I.A.N.D. (1981, p. 293)
15	SPHERE	This Report
16	FOXY	Green (1964, p. 27)
17	CLINTON CREEK	This Report
18	ACHERON (RG)	Morin et al (1977, p. 144)
19	CONE HILL	Silver-Lead-Gold Vein; D.I.A.N.D. (1981, p. 242)
20	MICKEY CREEK	Asbestos
21	SHELL CREEK	Gross (1969, p. 111)
22	CLIFF	McConnell (1904, p. 39-41)
23		Dowling (1915)
24	SOURDOUGH MINE	McConnell (1904); Green (1972, p. 146)
25	FIF	McConnell (1903, p. 39-41)
26	CALEY	Green (1964, p. 27-28)
27	SUBMARINE	Cockfield (1928, p. 9)
28	ROAL	Cockfield (1928, p. 9)
29	SILVER CITY	Green (1966, p. 23-24); Craig & Milner (1975, p. 15)
30	OGILVIE	
31	KEYSTONE	
32	ASS	Asbestos
33	WOODCHOPPER	D.I.A.N.D. (1982, p. 238-239,242)
34	ETHELDA	Copper Skarn
35	HAY MEADOW	
36	JECKELL	
37	SNYDER	
38	FIREWEED	Tempelman-Kluit (1965, p. 36)
39	GRAVE	D.I.A.N.D. (1981, p. 285)
40	SPOTTED FAWN	Cockfield (1919, p. 15-17); Green (1972, p. 137-138); Sinclair et al (1975, p. 73-74)
41	SUBTRACT	D.I.A.N.D. (1981, p. 285)
42	ROBERT SERVICE	Tempelman-Kluit (1965, p. 36)
43	MULTIPLY	Tempelman-Kluit (1965, p. 36)
44	CRAWFORD	Copper Vein
45	BLACKSTONE	Coal
46	CHAPMAN	Sinclair et al (1975, p. 76); Green (1972, p. 138)
47	FIFTEEN MILE	Copper-Silver Vein
48	CHANDINDU	McConnell (1903, p. 39-41)
49	SHAND	Morin et al (1977, p. 144)
50	JEROME	Coal
51	PAULA	Owen (1968, p. 8)
52	KRAUSE	Iron Stratabound
53	MASTADON	
54	RISCO	
55	WINAGE	
56	HEALY	
57	LAWRENCE	
58	LEDUC	Coal
59	BARETTE	Coal
60	THANE	Coal
61	HATTIE	Canada Dept. of Mines (1914, p. 124-125)
62	MONSTER (OG)	Sinclair et al (1976, p. 88)
63	TART	Zinc-Lead
64	OZ	Sinclair et al (1975, p. 74-75); This Report
65	SEELA	Lead-Zinc Vein
66	KIWI	Sinclair et al (1975, p. 75)
67	MORRISON	G.S.C., Map 711A (1942)
68	LOWNEY	
69	HALIFAX	D.I.A.N.D. (1981, p. 293)
70	CHAIN	Coal
71	HALE	
72	JEPHSON	Coal
73	O'BRIEN (A.J.)	This Report
74	SANDOW	Green (1972, p. 142)
75	UGLY	Zinc-Lead Vein
76	TJOP	This Report
77	STYX	D.I.A.N.D. (1982, p. 239)
78	MARN	This Report
79	CLIP	D.I.A.N.D. (1981, p. 288)
80	PLUTO	This Report
81	THOR	D.I.A.N.D. (1981, p. 289-291)
82	ETC	D.I.A.N.D. (1981, p. 293)
83	FROGGY	D.I.A.N.D. (1981, p. 293)
84	FRESNO	D.I.A.N.D. (1981, p. 293)
85	RIKI	D.I.A.N.D. (1982, p. 240)
86	TAK	This Report
87	KITL	D.I.A.N.D. (1982, p. 240)
88	GUCH	D.I.A.N.D. (1982, p. 241)
89	BALDY	D.I.A.N.D. (1981, p. 292)
90	RAIL	This Report
91	MAIDEN (TING)	D.I.A.N.D. (1981, p. 292)
92	REIN	D.I.A.N.D. (1981, p. 292)
93	NEBULOUS	D.I.A.N.D. (1981,p. 293)
94	DEM	Sinclair et al (1976, p. 85)
95	OD	Sinclair et al (1976, p. 86)
96	ID	Sinclair et al (1976, p. 87)
97	KIMI	Sinclair et al (1976, p. 88)
98	MONY	Morin et al (1977, p. 142)
99	GULCH	Morin et al (1977, p. 143)
100	ROSE	D.I.A.N.D. (1982, p. 242)
101	HOT	Morin et al (1979, p. 53)
102	TETA	Morin et al (1979, p. 54)
103	SUMTING	Morin et al (1979, p. 54)
104	BRX	Morin et al (1979, p. 55)
105	ROB	Morin et al (1979, p. 56)
106	DAWG	Morin et al (1979, p. 56)
107	PUB	Morin et al (1980, p. 29)
108	MICKEY	D.I.A.N.D. (1982, p. 241-242)

109	SPEC	This Report
110	SWEDE	D.I.A.N.D. (1982, p. 242)
111	GRAPS	D.I.A.N.D. (1982, p. 242)
112	TURK	This Report
113	WY	This Report
114	HOLLY	
115	TIZA	This Report
116	JOE "1"	This Report
117	CEDAR	This Report
118	PINE	This Report
119	SPEC-2	This Report

SPHERE

Teslin Joint Venture — Asbestos
Archer, Cathro and — 116 C 7 (15)
Associates (1981) Limited — (64°26'N,140°48'W)

References: D.I.A.N.D. (1982, p.237,242); Sinclair and Gilbert (1975, p.31).

Claims: TARTZHART 25,27-28.

Source: Summary by K. Grapes from assessment report 091401 by J.S. Murray.

History:

The area now covered by the TARTZHART claims was first staked as the BILL claims by Cassiar Asbestos Corp Ltd. around 1970. Cassiar performed geological mapping and a ground magnetic survey in 1971. The claims were allowed to lapse in 1972. The TARTZHART claims were staked in 1981 by the Teslin Joint Venture to cover anomalous asbestos fibre concentrations in soil.

Description:

The property is located approximately 3 km southwest of the Clinton minesite, on the south side of Clinton Creek. The claims are underlain by low grade metamorphic and cataclastic rocks of the Nasina Suite and Anvil Allochthon, respectively. Exposures are mainly of graphitic schist, chlorite schist and limestone. No ultramafic rocks have been located yet, however the Johnny asbestos showing is located 500 m beyond the claim boundary. The TARTZHART claims may be underlain by the same ultramafic body or by a separate ultramafic body which has not yet been identified.

Current Work and Results:

In 1981, field work consisted mainly of excavator pitting with some grid soil sampling, linecutting and geological mapping.

Approximately 1,400 soil samples and 54 silt samples were collected and 22 km of baseline were cut. Three anomalies were outlined by the sampling, two of which were investigated by 24 excavator pits. It was shown that the two anomalies are underlain by schist and sample contamination by airborne dispersion from the mill is suspected.

******

CLINTON CREEK

Archer, Cathro and — Asbestos
Associates (1981) Limited — 116 C 7 (17)
(64°27'N,140°41'W)

References: D.I.A.N.D. (1983, p.237,242).

Claims: TATER 1-28.

Source: Summary by K. Grapes from assessment report 091050 by J.S. Murray.

History:

The TATER claims were staked in 1981 for the Teslin Joint Venture on the northeast side of Clinton Creek, approximately 1.5 km east of the Clinton minesite. They cover an area that was first staked in 1963 by Cassiar Asbestos Corp. Ltd. as the ROSA, JOE, CRIPPLE and CAROL claims. Cassiar performed geological mapping, magnetometer surveys and bulldozer trenching in 1964 and 1970 over a large serpentinite body that is cut by the Clinton mine access road. However, the potential of the overburden-covered portions of this body was not thoroughly explored.

Current Work and Results:

In 1981, field work consisted of grid soil sampling, fibre dispersion surveying, linecutting and geological mapping. Exposure in the area is poor, but the claims appear to be underlain by a large ultramafic body. At surface, the serpentinite is barren and weathered, similar to the serpentinite that forms the sheared foot wall waste rock of the Porcupine Pit, 3 km to the west.

******

TJOP

Teslin Joint Venture, — Asbestos
Archer, Cathro and — 116 B 5,
Associates (1981) Limited — 116 C 8 (76)
(64°22'N,140°00'W)

References: D.I.A.N.D. (1982, p.237,244);
D.I.A.N.D. (1981, p.284-285).

Claims: TJOP (29)

Source: Summary by K. Grapes from assessment report 091059 by R.J. Cathro and J.S. Murray.

Current Work and Results:

The 1981 field work consisted of excavator pitting, soil sampling, fiber dispersion surveying and geological mapping. One hundred and nineteen pits were excavated near nine showings discovered in 1980 by fiber dispersion surveys, and beneath three large soil anomalies. The pits were up to 5 m deep and spaced at approximately 50 m intervals across the target areas.

Chrysotile mineralization grading up to 4% of group 5 fibre (20% of fibres exceed 6.5 mm in length) occurs at two of the showings. The best fibre is confined to lenses of blocky serpentinite less than 25 m across. Surrounding rocks are mainly barren, fish scale serpentinite.

******

MARN
Noranda Exploration Company Limited
116 B 7,10 (78)
(64°29'N,138°48'W)

References: D.I.A.N.D. (1982, p.237,239); D.I.A.N.D. (1981, p.2,284,287-288,293).

Claims: MARN 1-108

Source: Summary by K. Grapes from assessment report 091432 by J. Biczok.

Current Work and Results:

A limited program of geological mapping was undertaken on the southern MARN claims in 1982.

******

PLUTO
Cominco Ltd.
Molybdenum, Tungsten
116 C 8 (80)
(64°20'N,140°22'W)

Reference: D.I.A.N.D. (1982. p.3,8,12,237,239).

Claims: PLUTO 1-74,76-166

Source: Summary by K. Grapes from assessment report 091398 by I.A. Paterson.

Current Work and Results:

One NQ size diamond drill hole totalling 709.27 m was drilled on the PLUTO 26 claim.

******

RAIL
Noranda Exploration Company Limited
Tungsten Skarn
116 C 8 (90)
(64°23'N,140°10'W)

Reference: D.I.A.N.D. (1982, p.237,241-242).

Claims: RAIL 1-214; ROAD 1-4; TRACK 1-28; TIE 1-40; SPIKE 1-156

Source: Summary by K. Grapes from assessment report 091413 by R.S. Rogers.

Current Work and Results:

Minor tungsten mineralization was intersected in one of three diamond drill holes drilled on the property in 1982. In total, 208.80 m were drilled on the RAIL 1 and 2 claims. Best mineralization occurs in garnet diopside skarn containing moderate amounts of dissemin-ated pyrrhotite. On the RAIL 181 claim a 300 m trench was excavated over a 1980 airborne magnetometer anomaly. Unmineralized quartz feldspar porphyry was uncovered.

******

TURK
Archer, Cathro and Associates (1981) Limited
Asbestos
116 C 7 (112)
(64°29'N,140°47'W)

Reference: D.I.A.N.D. (1982, p.238,242).

Claims: TURK 1-156

Source: Summary by K. Grapes from assessment report 090959 by J.S. Murray.

History:

The TURK claims were staked for Teslin Joint Venture (Brinco Mining Ltd, Cominco Limited and Exploram Minerals Ltd.) in 1981 to cover several poorly exposed ultramafic bodies and areas of anomalous asbestos fibre concentration. Although the property is close to the Clinton Mine, its potential had never been thoroughly explored. Trenching was done by Voels International Development Ltd. around 1967 and a ground magnetic survey was conducted in 1970 by Cassiar Asbestos Corporation Ltd.

Description:

The TURK claims are located northwest of the Clinton airstrip, 5 km northwest of the Clinton Mine. They are underlain by low grade metamorphic rock of the Nasina Suite and cataclastic and alpine type ultramafic rock of the Anvil Allochthon. The ultramafic rock consists of partially to highly sheared serpentinite bodies, which are enveloped by graphitic schists of the Nasina Suite.

Current Work and Results:

The 1981-1982 exploration program consisted of grid soil sampling, linecutting, geological mapping and trenching.

Approximately 2,400 soil and stream sediment samples were collected and evaluated for their asbestos fibre content. The survey has shown that fibres up to 5 mm long are dispersed in soils throughout the area although outcroppings are rare and very few fibre veins have been seen. Four anomalies were outlined containing fibres up to 11.5 mm in length. One of the anomalies was investigated with two bulldozer trenches, which uncovered a weakly mineralized zone within sheared serpentinite. Two of the anomalies are thought to be caused by wind-blown fibre from the Clinton millsite located nearby. Two old showings on the TURK property are also being investigated.

******

WY
Territorial Gold Placers 116 C 2 (113)
(64°00'N,140°49'W)

Reference: D.I.A.N.D. (1982, p.238,242)

Claims: WY 1-3; GLAC 1-62

Source: Summary by K. Grapes from assessment report 091385 by G.C. Gutrath.

Current Work and Results:

The WY claims, staked in 1981, are located on Miller Creek. In 1982 a road was cut through claim WY 2 and an area totalling 27,181.8 m^3 was stripped, exposing bedrock in a number of locations. The bedrock exposures were examined in an attempt to locate the source of cinnabar found in placer operations in the area.

Three types of economic metals occur in the area - tungsten, mercury and gold. Strong hydrothermal alteration and intense shearing with carbonate, pyrite and silica mineralization occur in bedrock exposures on the WY 2 claim. Cinnibar crystals, barite nodules, scheelite and wolframite are found in placer concentrates on the WY 2 claim, but bedrock mineralization has not been found.

******

TAK
Noranda Exploration 116 B 9,10 (86)
Company Limited (64°33'N,138°32'W)

Reference: D.I.A.N.D. (1982, p.237,240).

Claims: TAK 1-48

Source: Summary by K. Grapes from assessment report 091417 by B. Jago.

Current Work and Results:

During 1982, detailed stream sediment and rock geochemical sampling, and mapping on a scale of 1:10,000 were conducted.

Twenty-three stream sediment samples were collected. Twenty rock samples of the shale unit were barren of base and precious metal mineralization.

******

TIZA Asbestos
Teslin Joint Venture; 116 C 8 (115)
Archer, Cathro and (64°18'N,140°15'W)
Associates (1981) Limited

Reference: Tempelman-Kluit (1979).

Claims: TIZA (28)

Source: Summary by K. Grapes from assessment report 091402 by J.S. Murray.

History:

The Caley deposit was first staked in 1931 as the ISABELLE and MARIO claims. It was restaked as the BROWNIE, SKIP etc. in 1955 and optioned in 1956 to Conwest Exploration Ltd. The property was trenched in 1956 and transferred to Cassiar Asbestos Corp Ltd. in 1978 who explored with more trenching and 360 m of drifting in two adits, then dropped the option. The property was optioned and explored in 1963-65 by Canadian Johns-Manville Co. Ltd. They conducted ground magnetometer and mapping surveys, and diamond drilled 610 m in 12 holes. In 1966-67 Sphere Development Corp. Ltd. added more claims, flew an aeromagnetometer survey, and in 1971 did some trenching. The property was sold in 1972 to Anglo Western Minerals Ltd. Further geophysical surveying and trenching were conducted in 1972. In 1977 the Caley deposit was restaked as the PET claims. Approximately 300,000 tonnes of preconcentrated ore was trucked to the Clinton mill. When the Clinton Mine shut down in 1978 all but two of the claims were allowed to lapse. In 1981 the TIZA claims were staked to the southwest of the two PET claims covering the Caley Mine.

Description:

The claims are underlain by several small to medium sized ultramafic bodies of the Anvil Allochthon containing small dyke-like bodies of diorite. Most ultramafites have been totally altered to serpentinite enveloped by quartz-carbonate and soapstone. The surrounding rocks are predominantly chlorite and graphite schists of the Nasina Series.

Current Work and Results:

One thousand two hundred and ninety (1,290) soil samples and 31 stream sediment samples were collected in 1981. Three anomalies were outlined and investigated with 130 excavator pits. Best mineralization occurs at the Knob Hill showing in weathered blocky serpentinite. Mineralization is similar to that at the Caley Mine.

******

SPEC-2
C. Ashley et al
116 B 3 (119)
(64°07'N,139°12'W)

References: D.I.A.N.D. (1981,p.293); D.I.A.N.D. (1982, p.237).

Claims: SPEC 1-52

Source: Summary by K. Grapes from assessment report 091023 by C. Ashley.

Current Work and Results:

The SPEC claims were mapped on a reconnaissance scale, stream sediment sampled, and geophysically surveyed (VLF, CEM) in the 1980 field season.

******

1982 MINERAL CLAIMS STAKED

SPEC
C. Ashley
116 B 3 (109)
(64°00'N,139°07'W)

Claims 1982: SPEC 1-8; JOE 1-4

JOE "1"
L. Morrison
116 B 3 (116)
(64°02'N,139°09'W)

Claims 1982: JOE "1" 1-8

O'BRIEN (A.J.)
116 B 8 (73)
(64°17'N,138°10'W)

Claims 1982: AJ 1-36

OZ
116 B 12, 13 (64)
(64°44'N,139°44'W)

Claims 1982: HARP 1-24

WY
Territorial Gold Placers
116 C 2 (113)
(64°01'N,140°48'W)

Claims 1982: GLAC 1-62

CEDAR
116 C 2 (117)
(64°03'N,140°54'W)

Claims 1982: CEDAR 1-6; BIRCH 1-4; DART 1-2

PINE
116 C 2 (118)
(64°03'N,140°44'W)

Claims 1982: PINE 1-4

CLINTON CREEK
Archer, Cathro and Associates (1981) Limited
116 C 7 (17)
(64°27'N,140°41'W)

Claims 1982: TATER 29-38, 41-86

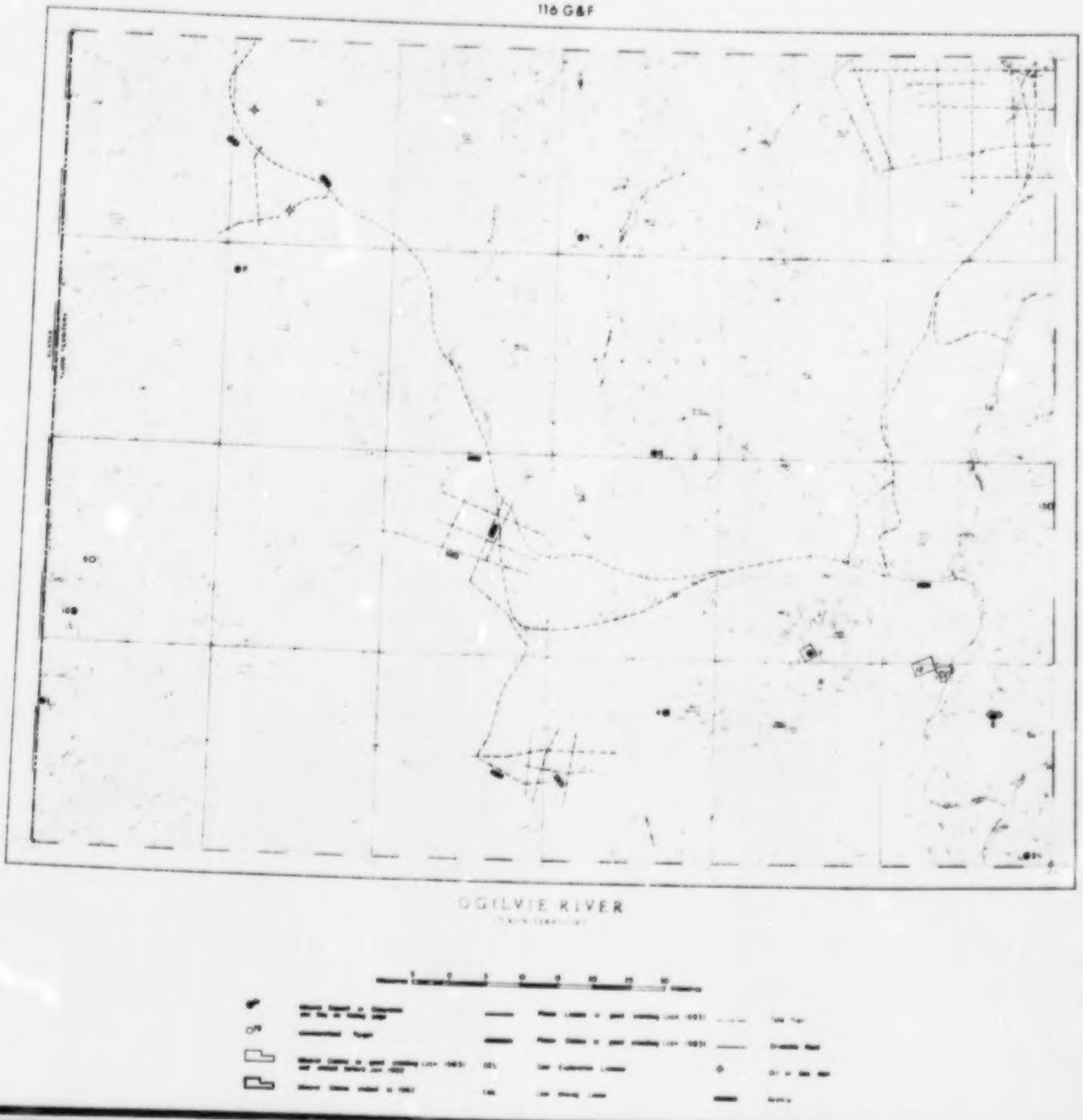
TURK
Archer, Cathro and Associates (1981) Limited
116 C 7 (112)
(64°29'N,140°47'W)

Claims 1982: TURK 97-156

RAIL
Noranda Exploration Company Limited
116 C 8 (90)
(64°22'N,140°13'W)

Claims 1982: SPIKE 1-156

******


116 G&F
OGILVIE RIVER
(YUKON TERRITORY)

OGILVIE MAP-AREA (NTS 116 F-G)

General Reference: GSC Open File 715 by: D.K. Norris, 1980.
GSC Map 1526A by: D.K. Norris, 1982.

NO.	PROPERTY NAME	REFERENCE
1	BURGOYNE (KEPT)	Sinclair et al (1976, p. 90)
2	SIT DOWN	Norris (1976, p. 459)
3	DYKE	Norris (1976, p. 344)
4	NUCLEAR	Sinclair (1975, p. 77-78)
5	GIG	Lead Vein
6	COOT	Lead Vein
7	BIBLO	D.I.A.N.D. (1981, p. 295)
8	MILCH	D.I.A.N.D. (1982, p. 245)
9	PL	Morin et al (1980, p. 30-31)
10	TIN	Morin et al (1980, p. 30)
11	ELBOW	Morin et al (1980, p. 31)
12	KZ	This Report
13	BANG ON	D.I.A.N.D. (1982, p. 245); This Report

KZ

Noranda Exploration Company Limited
116 G 1,8 (12)
(64°15'N,138°33'W)

Reference: D.I.A.N.D. (1982, p.245).

Claims: KZ 1-24

Source: Summary by K. Grapes from assessment report 091416 by B. Jago.

History:

The KZ claims were staked in 1981 to cover a kill zone and high stream sediment geochemical values. A soil geochemical survey was conducted the same year.

Description:

The claim group is located 130 km north of Dawson City and 4 km west of Kilometre 180 on the Dempster Highway. It is underlain by a broadly folded sequence of Ordovician to Devonian clastic and chemical sedimentary rocks.

Current Work and Results:

Geological mapping failed to locate the source of the kill zone. The 128 soil samples collected indicate that the metal enrichment in soils is erratic and lead values are low. Six, one metre deep pits did not confirm anomalies at depth.

******

BANG-ON

Noranda Exploration Limited
Barite Veins
116 G 8 (13)
(65°26'N,138°01'W)

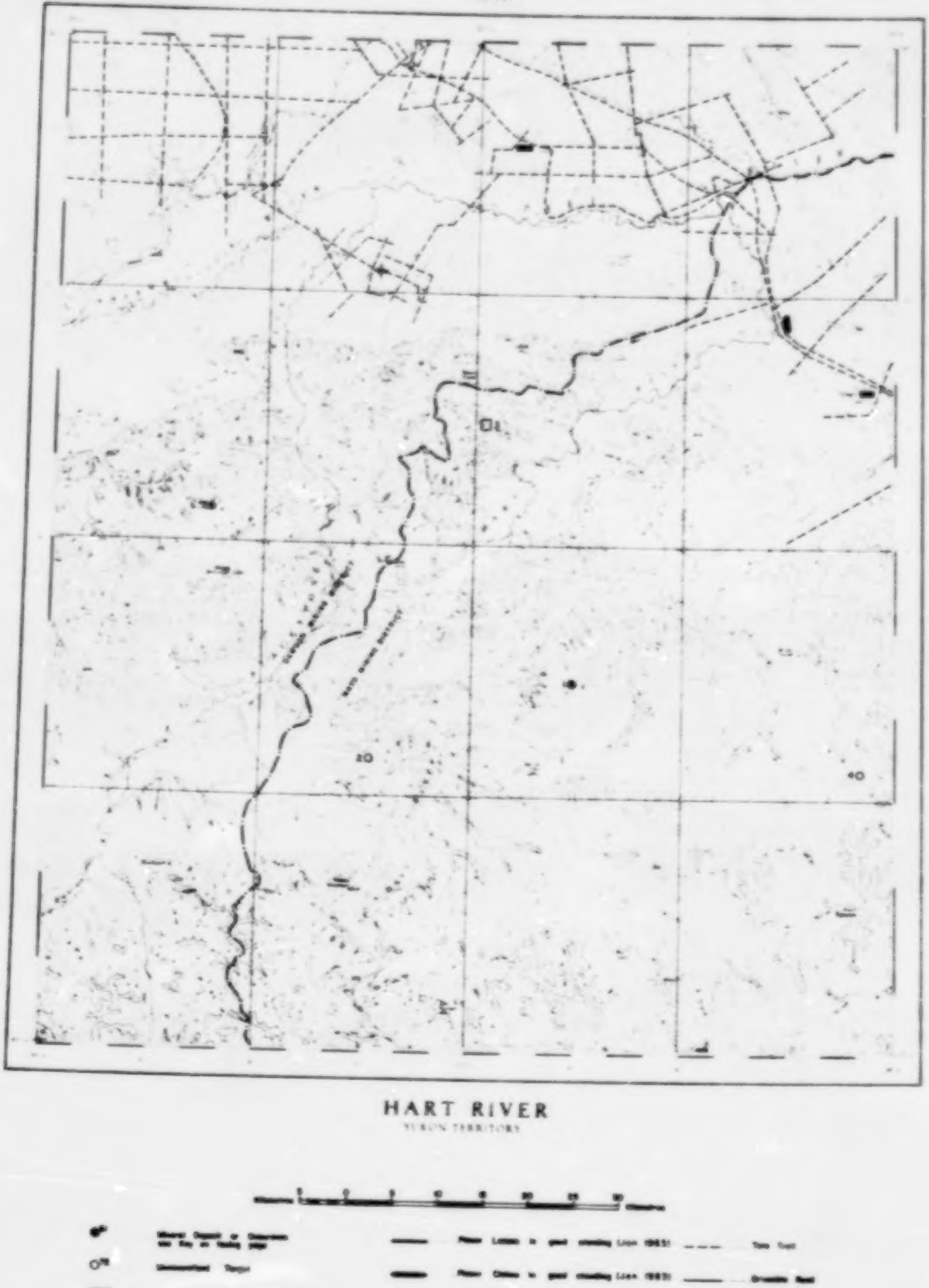
Claims: BANG-ON (24)

Current Work and Results:

In 1982, the claims were prospected and scattered barite veins cutting Road River Formation limestone were located.

******

116 H



HART RIVER

YUKON TERRITORY

HART RIVER MAP-AREA (NTS 116 H)

General Reference: GSC Open File 715 by: D.K. Norris, 1980.
GSC Map 1527A by: D.K. Norris, 1982.

NO.	PROPERTY NAME	REFERENCE
1	CUNG	Sinclair et al (1975, p. 69-70)
2	JANE	Sinclair et al (1976, p. 75); D.I.A.N.D. (1982, p. 247); This Report
3	CYLINDER	Morin et al (1980, p. 24)
4	HEIDI	D.I.A.N.D. (1982, p. 247); This Report

JANE
Noranda Exploration Limited

Geochemical Target
116 H 6 (2)
(65°17'N,137°15'W)

Claims: WENDY (24)

Current Work and Results:

The claims were mapped at a scale of 1:13,000 in 1982 and a grid soil geochemistry program was completed over the central claims. A Zn soil anomaly is underlain by Permian shales.

******

HEIDI
Noranda Exploration Limited

Barite Vein
116 H 8 (4)
(65°16'N,136°04'W)

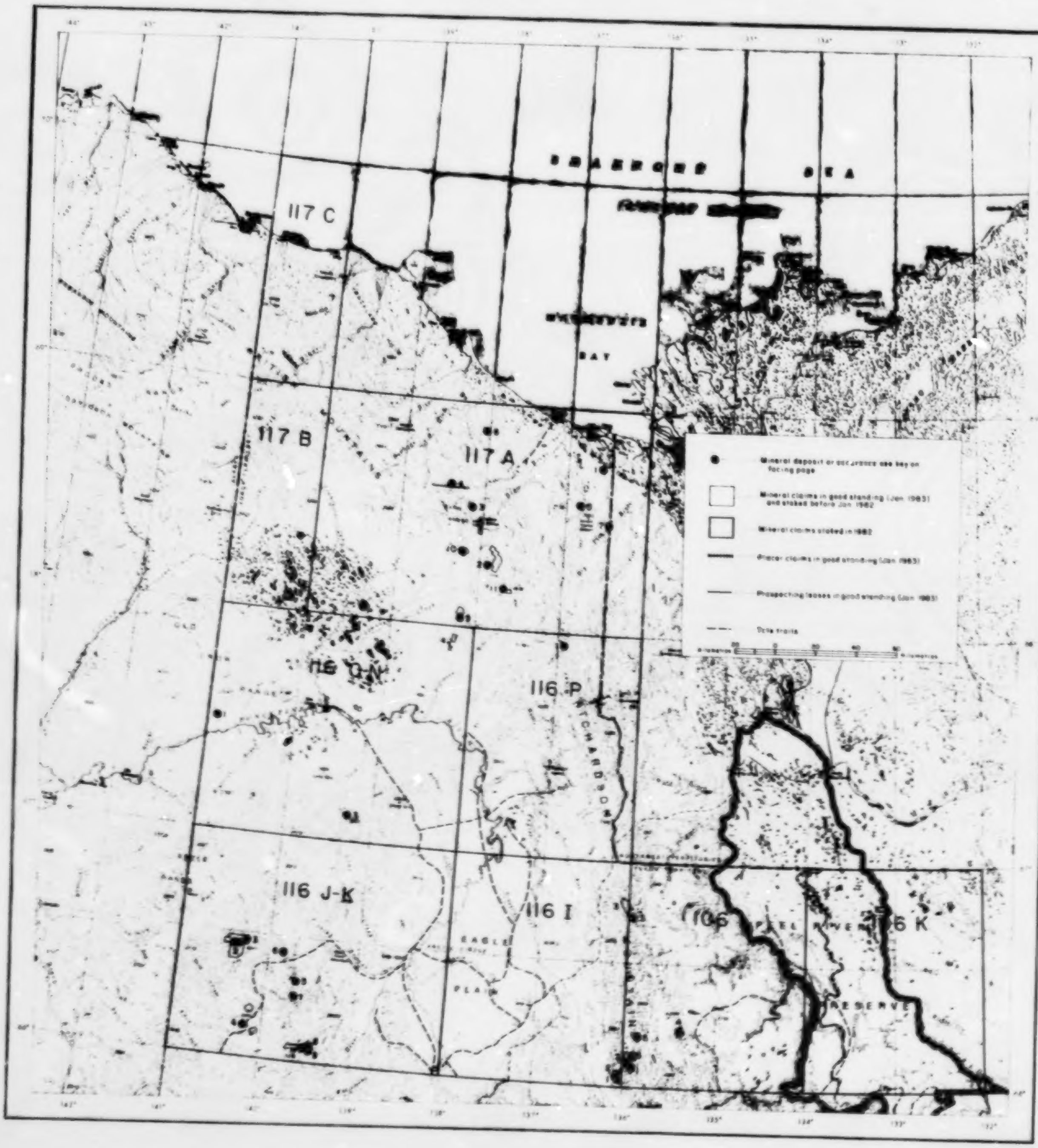
Claims: HEIDI (4)

Current Work and Results:

The claims were mapped at 1:50,000 scale in 1982. Barite veins occur within Road River Formation limestone.

******

106 K,L,
116 I,K, N/O,P
117 A


117 C
117 B
117 A
116 O-N
116 P
116 J-K
116 I
106
106 K
BEAUFORT SEA
MACKENZIE BAY
RICHARDSON
EAGLE PLAIN
PEEL RIVER
RESERVE
Mineral deposit or occurrence see key on facing page
Mineral claims in good standing (Jan. 1983) and staked before Jan. 1982
Mineral claims staked in 1982
Placer claims in good standing (Jan. 1983)
Prospecting leases in good standing (Jan. 1983)
20
0
20
40
60
Kilometres

MARTIN HOUSE MAP-AREA (NTS 106 K)

General Reference: GSC Open File 715 by: D.K. Norris, 1980.
GSC Map 1525A by: D.K. Norris, 1981.

NO.	PROPERTY NAME	REFERENCE
1	CARIBOU BORN	Coal

TRAIL RIVER MAP-AREA (NTS 106 L)

General Reference: GSC Open File 715 by: D.K. Norris, 1980.
GSC Map 1524A by: D.K. Norris, 1981.
GSC Open File 875 by: M.P. Cecile, I.F. Hutcheon, V. Gardner, 1982.

NO.	PROPERTY NAME	REFERENCE
1	PILON	Sinclair et al (1975, p. 88-89)
2	TWICE	Sinclair et al (1975, p. 90-91)
3	TOUCHE	This Report
4	NOR	D.I.A.N.D. (1981, p. 300-301)
5	RAS	Sinclair et al (1976, p. 78)
6	PETE	Sinclair et al (1976, p. 79)

EAGLE RIVER MAP-AREA (NTS 116 I)

General Reference: GSC Open File 715 by: D.K. Norris, 1980.
GSC Map 1523A by: D.K. Norris, 1981.
GSC Open File 875 by: M.P. Cecile, I.F. Hutcheon, V. Gardner, 1982.

NO.	PROPERTY NAME	REFERENCE
1	LLOD	Sinclair et al (1975, p. 87-88)
2	HARIVAL	Sinclair et al (1975, p. 87-88)
3	TOUCHE	This Report

PORCUPINE RIVER MAP-AREA (NTS 116 J-K)

General Reference: GSC Open File 715 by: D.K. Norris, 1980.
GSC Map 1522A by: D.K. Norris, 1981.

NO.	PROPERTY NAME	REFERENCE
1	PEACH	Sinclair et al (1975, p. 81-82)
2	RUSTY SPRINGS (TERMUENDE)	This Report
3	ALTO	Norris (1976, p. 461)
4	BERN	Sinclair et al (1975, p. 79-81)
5	FISHING BRANCH	Sinclair et al (1975, p. 81-82)
6	MOKO	Sinclair et al (1975, p. 81-82)
7	WART	Sinclair et al (1975, p. 84)
8	YUM	Sinclair et al (1975, p. 83-84)
9	BULLIS	Sinclair et al (1975, p. 85)

OLD CROW MAP-AREA (NTS 116 N-O)

General Reference: GSC Open File 715 by: D.K. Norris, 1980.
GSC Map 1518A by: D.K. Norris, 1981.

NO.	PROPERTY NAME	REFERENCE
1	SUNAGHUN	Green & Godwin (1964, p. 18)
2	TACK	McConnell (1890, p. 127-128)
3	SALEKEN	Sinclair et al (1975, p. 85-86)
4	BEAR	

BELL RIVER MAP-AREA (NTS 116 P)

General Reference: GSC Open File 715 by: D.K. Norris, 1980.
GSC Map 1519A by: D.K. Norris, 1981.

NO.	PROPERTY NAME	REFERENCE
1	NORRIS	Norris (1974, p. 348)

BLOW RIVER MAP-AREA (NTS 117 A)

General Reference: GSC Map 1516A by: D.K. Norris, 1981.

NO.	PROPERTY	REFERENCE
1	MOOSE CHANNEL	Bostock (1953, p. 30)
2	BONNET	Jeletsky (1960)
3	HOIDAHL	Vokes (1963)
4	WELCOME	Bostock (1953, p. 26)
5	RAPID	Young (1972, p. 232)
6	SHINGIE	Norris (1972, p. 97)
7	STRADDLE	Young (1972, p. 232)
8	MAM	D.I.A.N.D. (1981, p. 304)
9	NET	Morin et al (1979, p. 58)
10	BOU	Morin *et al* (1979, p. 58)
11	LIN	Morin *et al* (1980, p. 31)

TOUCHE

Noranda Exploration
Company Limited

Barite
106 L 13,
116 I 16 (3)
(66°51'N,136°02'W)

Reference: D.I.A.N.D. (1982, p.249-250).

Claims: TOUCHE 1-56

Source: Summary by K. Grapes from assessment report 091403 by B. Jago.

Current Work and Results:

A detailed mapping and soil, rock, stream sediment sampling program was conducted in 1982. Approximately 100 rock, 400 soil and 20 stream sediment samples were collected.

Mapping defined a thick sequence of intensely altered and folded Cambrian to Silurian clastic and chemical sedimentary rocks. The soil, stream sediment and rock geochemical survey defined several zones of metal enrichment, thou[illegible]one regarded as significant.

Two EM-16 geophysical surveys conducted on the property in 1982 gave inconclusive results due to permafrost conditions.

******

RUSTY SPRINGS (TERMUENDE)

Kenton Natural Resources
Corporation

116 K 8,9 (2)
(66°30'N, 140°25'W)

Reference: D.I.A.N.D. (1981, p.301-304), D.I.A.N.D. (1982, p. 48-50).

Claims: RIO 1-104; NATE 3-14; JP 1-54; CARB 1-16; HG 1-146; MOOSE 1-48.

Source: Summary by K. Grapes from assessment report 091410 by J.W. Davis and C.H. Aussant.

Current Work and Results:

In 1982, soil geochemical sampling, geophysical (VLF-EM) surveying, detailed geological mapping, trenching and diamond drilling were carried out on the property.

A total of 1,300 soil samples was collected and analyzed for Cu, Zn, Pb and Ag. A strong north-trending Ag-Cu-Pb anomaly has been outlined on Orma Hill, with a Pb-Au-Cu-Ag anomaly outlined to the south. These anomalies appear to be associated with a steeply dipping, north-south trending, epithermal vein system.

High zinc values predominate on Mike Hill. Two Cu-Pb-Au-Ag anomalies trending east-west transect the top of Mike Hill.

A VLF-EM survey indicates the downward continuation of the vein system on Orma Hill. On Mike Hill the VLF-EM response was not as strong, but direct correlation between conductors and known mineralization can be made.

Three previously excavated trenches were re-opened and deepened and three new trenches were cut. Two of the older trenches uncovered galena/tetrahedrite veins. The mineralized zones were channel sampled and assayed for Cu, Pb, Au, Ag, and Au. The values returned range from 1,781 g Ag/t over 0.6 m to 458.05 g Ag/t over 0.1 m. A grab sample of massive tetrahedrite yielded 13,260 g Ag/t. Two of the new trenches reached bedrock and mineralization. One of the trenches uncovered a massive, one metre wide galena/tetrahedrite vein in a seven metre wide mineralized gossan with abundant secondary copper mineralization. Assay results of the vein ran 1,444 g Ag/t over one metre.

Eight NQ or HQ diamond drill holes totalling 509.9 m were drilled on Orma Hill. Two of the holes, drilled on the same vein system, encountered significant mineralization, with 5 other holes intersecting minor amounts of mineralization. Mineralized zones assayed 63.77 g Ag/t and 5.92% Pb over 0.93 m and 129.60 g Ag/t and 3.54% Pb over 7.3 m.

******

LIST OF REFERENCES

ABBOTT, J.G. 1982. Structure and Stratigraphy of the Macmillan Fold Belt; Evidence for Devonian Faulting. pp. 22-27, in D.I.A.N.D. 1982: YEG 1981, Dept. of Indian Affairs and Northern Development, 282 pp.

BLUSSON, S.L. 1966. Frances Lake map-area; Geol. Surv. Can., Preliminary Map 6-1966.

BLUSSON, S.L. 1971. Sekwi Mountain map-area; Yukon Territory and District of Mackenzie; Geol. Surv. Can., Paper 71-22 (Including Map 1333A).

BLUSSON, S.L. 1974. Operation Stewart (northern Selwyn Basin): Mount Eduni (106 A), Bonnet Plume Lake (106 B), Nadaleen River (106 C), Lansing (105 N) and Niddery Lake (105 O); Geol. Surv. Can., Open File 205.

BLUSSON, S.L. 1976. Selwyn Basin, Yukon and District of Mackenzie; Geol. Surv. Can., Paper 76-1A, p. 131-132.

BOSTOCK, H.S. 1936. Preliminary report - prospecting possibilities of Teslin - Quiet Lake - Big Salmon area, Yukon; Geol. Surv. Can., Paper 36-2.

BOSTOCK, H.S. 1936. Mining industry of Yukon, 1935; Geol. Surv. Can., Mem. 193.

BOSTOCK, H.S. 1937. Mining industry of Yukon, 1936; Geol. Surv. Can., Mem. 209.

BOSTOCK, H.S. 1938. Mining industry of Yukon, 1937; Geol. Surv. Can., Mem. 218.

BOSTOCK, H.S. 1939. Mining industry of Yukon, 1938; Geol. Surv. Can., Mem. 220.

BOSTOCK, H.S. 1941. Mining industry of Yukon, 1939 and 1940; Geol. Surv. Can., Mem. 234.

BOSTOCK, H.S. 1942. Ogilvie, Yukon Territory; Geol. Surv. Can., Map 711A.

BOSTOCK, H.S. 1947. Mayo, Yukon Territory; Geol. Surv. Can., Map 890A.

BOSTOCK, H.S. 1948. Preliminary map, McQuesten, Yukon Territory (Map and descriptive notes); Geol. Surv. Can., Paper 48-25 (Including Preliminary Map 48-25A).

BOSTOCK, H.S. 1953. Potential mineral resources of Yukon Territory; Geol. Surv. Can., Paper 50-14 (Revised Edition).

BOSTOCK, H.S. 1957. Yukon Territory, Selected Field Reports of the Geological Survey of Canada 1898 to 1933, Yukon Territory; Geol. Surv. Can., Mem. 284.

BOYLE, R.W. 1965. The geochemistry of arsenic, Keno Hill - Galena Hill area, Yukon, Canada; Pages 757-770 In Dr. D.N. Wadia Commemorative Volume. Mining, Geol. and Metall, Inst. of India. Calcutta, India.

BROCK, R.W. 1910. Work of the Director - Yukon Territory; Geol. Surv. Br., Summ. Rept. for 1909, p. 14-26.

CAIRNES, D.D. 1908. Whitehorse and Tantalus regions; Geol. Surv. Br., Summ. Rept. for 1907, p. 10-15.

CAIRNES, D.D. 1910. Preliminary memoir on the Lewes and Nordenskiold Rivers coal district; Geol. Surv. Can., Mem. 5.

CAIRNES, D.D. 1912. Wheaton district, Yukon Territory; Geol. Surv. Can., Mem. 31 (Including Map 60A).

CAIRNES, D.D. 1915. Upper White River district, Yukon; Geol. Surv. Can., Mem. 50 (Including Map 123A).

CAIRNES, D.D. 1915. Exploration in southwestern Yukon; Geol. Surv. Can., Summ. Rept. for 1914, p. 10-33.

CAIRNES, D.D. 1916. Wheaton District, southern Yukon; Supplement to Geol. Surv. Can., Mem. 31. Geol. Surv. Can., Summ. Rept. for 1915, p. 36-49.

CAIRNES, D.D. 1917. Scroggie, Barker, Thistle and Kirkman Creeks, Y.T.; Geol. Surv. Can., Mem. 97.

CAMPBELL, R.B. 1967. Geology of the Glenlyon map-area; Geol. Surv. Can., Mem. 352 (Including Maps 1221-A and 1222-A).

CAMPBELL, R.B., DODDS, C.J. 1982. Geological map of the S.W. Kluane map-area 115 F and G, Geol. Surv. Can., Open File 829.

CAMPBELL, R.B., DODDS, C.J. 1982. Geology of Mount St. Elias map-area 115 B and C. Geol. Surv. Can., Open File 830.

CAMPBELL, R.B., DODDS, C.J. 1982. Geology of S.W. Dezadeash map-area 115A. Geol. Surv. Can., Open File 831.

CAMSELL, C. 1907. Report on the Peel River and tributaries, Yukon and Mackenzie; In Annual Report, 1904 Vol. XVI, Part CC.

CANADA DEPT. OF MINES, 1914. The Canadian Mineral Industry 1913; Mines Branch Publication 222.

CECILE, M.P. 1980. Generalized Geological Map in the area of the Northern Selwyn and Mackenzie Mountains; Geol. Surv. Can., Open File 710.

CECILE, M.P. (COMP) 1980. Geology of Northeast Niddery Lake Map Area, Yukon (105 O); Geol. Surv. Can., Open File 765.

CECILE, M.P., HUTCHEON, I.F., GARDNER, V. 1982. Geology map of the Northern Richardson Anticlinorium 106 L 12,13, 116 I 9,16 Geol. Surv. Can., Open File 875.

COCKFIELD, W.E. 1919. Explorations in Yukon Territory; Geol. Surv. Can., Summ. Rept. for 1917 B, p. 1-8.

COCKFIELD, W.E. 1919. Silver-lead deposits of the Twelve Mile area, Yukon; Geol. Surv. Can., Summ. Rept. for 1918 B, p. 15-17.

COCKFIELD, W.E. 1921. Sixty Mile and Ladue Rivers area, Yukon; Geol. Surv. Can., Mem. 123.

COCKFIELD, W.E. 1922. Silver-lead deposits of Davidson Mountains, Mayo District, Yukon; Geol. Surv. Can., Summ. Rept. for 1921 A, p. 1-6.

COCKFIELD, W.E. 1924. Silver-lead deposits of Beaver River area, Yukon; Geol. Surv. Can., Summ. Rept. for 1923 A, p. 22-28.

COCKFIELD, W.E. 1925. Upper Beaver River area, Mayo District, Yukon; Geol. Surv. Can., Summ. Rept. for 1924 A, p. 1-8. (Includes Map No. 2064).

COCKFIELD, W.E. 1928. Silver-lead deposits of Fifteen Mile Creek, Yukon; Geol. Surv. Can., Summ. Rept. for 1927 A, p. 8-10.

COCKFIELD, W.E. 1928. Silver-lead deposits of Rude Creek, Yukon; Geol. Surv. Can., Summ. Rept. for 1927 A, p. 11-13.

CRAIG, D.B., LAPORTE, P.J. 1972. North of 60 -Mineral Industry Report 1969 and 1970. Vol. 1 - Yukon Territory and southwestern sector, District of Mackenzie; Canada, Dept. of Indian Affairs and Northern Development, Northern Economic Development Branch, Report EGS 1972-1.

CRAIG, D.B., MILNER, M.W. 1975. North of 60 - Mineral Industry Report 1971 and 1972, Yukon Territory; Vol. 1 of 3. Canada, Dept. of Indian Affairs and Northern Development, Northern Natural Resources and Environment Branch, Report EGS 1975-76.

DAWSON, G.M. 1889. Rept. on an exploration in the Yukon District, N.W.T., and adjacent northern portion of B.C.; Geol. and Nat. Hist. Surv. Can., Annual Rept. for 1887-1888, Vol. 3 (Pt. 1); Rept. B, p. 5-261 (Including Maps 275, 276, 277). See also Geol. Surv. Can., Pub. No. 629 (Including Maps 274-277 incl.), pub. in 1888.

DAWSON, K.M. 1975. Carbonate-hosted zinc-lead deposits of the northern Canadian Cordillera; Pages 239-241 In Rept. of activities, Pt. A: April to October 1974. Geol. Surv. Can., Paper 75-1A.

D.I.A.N.D. 1971. Mines and Mineral Activities, 1971; Dept. of Indian Affairs and Northern Development, p. 73.

D.I.A.N.D. 1981. Yukon Geology and Exploration, 1979-1980; Dept. of Indian Affairs and Northern Development, Geology Section Publication, 364 pp.

D.I.A.N.D. 1982. Yukon Exploration and Geology 1981; Dept. of Indian Affairs and Northern Development, Geology Section Publication, 282 pp.

DOUGLAS, R.J.W. 1976. Geology, La Biche River, District of Mackenzie; Geol. Surv. Can., Map 1380A.

DOWLING, D.B. 1915. Coal Fields and Coal Resources of Canada, Geol. Surv. Can., Mem 59.

ECKSTRAND, O.R. 1972. Geology of Canadian Nickel Deposits; Pages 81-82 In Rept. of activities, Pt. A: April to October, 1971. Geol. Surv. Can., Paper 72-1A.

FINDLAY, D.C. 1967. The mineral industry of Yukon Territory and southwestern District of Mackenzie, 1966; Geol. Surv. Can., Paper 67-40.

FINDLAY, D.C. 1969a. The mineral industry of Yukon Territory and southwestern District of Mackenzie, 1967; Geol. Surv. Can., Paper 68-68.

FINDLAY, D.C. 1969b. The mineral industry of Yukon Territory and southwestern District of Mackenzie, 1968; Geol. Surv. Can., Paper 69-55.

GABRIELSE, H., et al. 1973. Geology of the Flat River, Glacier Lake and Wrigley Lake map-areas (95 E, L, M), District of Mackenzie and Yukon Territory; Geol. Surv. Can., Mem. 366 (Includes Maps 1313A, 1314A, 1315A).

GARRETT, R.G. 1971. Regional geochemical census of plutonic rocks in eastern Yukon Territory; Pages 72-73, Geol. Surv. Can., Paper 71-1A.

GLEESON, C.F. 1970. Heavy mineral studies in the Klondike area, Yukon Territory; Geol. Surv. Can., Bull. 173.

GORDEY, S.P. 1980. Nahanni Map Area, Yukon Territory and Northwest Territories (105 I); Geol. Surv. Can., Open File Report 689.

GORDEY, S.P. 1981. Structural Cross Section, Northern Selwyn and Mackenzie Mountains; Geol. Surv. Can., Open File 807.

GREEN, L.H. 1965. The mineral industry of Yukon Territory and southwestern District of Mackenzie, 1964; Geol. Surv. Can., Paper 65-19. 94 pp.

GREEN, L.H. 1966. THe mineral industry of Yukon Territory and southwestern District of Mackenzie, 1965; Geol. Surv. Can., Paper 66-31.

GREEN, L.H. 1968. Lode mining potential of Yukon Territory; Geol. Surv. Can., Paper 67-36.

GREEN, L.H. 1971. Geology of Mayo Lake, Scougale Creek and McQuesten Lake map areas, Yukon Territory (105 M 15, 106 D 2, 106 D 3); Geol. Surv. Can., Mem. 357 (Includes Maps 1270A, 1269A, 1268A).

GREEN, L.H. 1972. Geology of Nash Creek, Larsen Creek and Dawson map-areas, Yukon; Geol. Surv. Can., Mem. 364 (Includes Maps 1282A, 1283A, 1284A).

GREEN, L.H., GODWIN, C.I. 1963. The mining industry of Yukon Territory and southwestern District of Mackenzie, 1962; Geol. Surv. Can., Paper 63-38.

GREEN, L.H., GODWIN, C.I. 1964. The mineral industry of Yukon Territory and southwestern District of Mackenzie, Northwest Territories, 1963; Geol. Surv. Can., Paper 64-36.

GROSS, G.A. 1969. Geology of iron deposits in Canada; northern Ontario, Yukon, Queen Charlotte Islands (41, 116 C, 103 F); Pages 111-112 In Rept. of activities, Pt. A: April to October, 1968. Geol. Surv. Can., Paper 69-1A.

JELETZKY, J.A. 1960. Uppermost Jurassic and Cretaceous rocks, east flank of the Richardson Mountains between Stony Creek and Lower Donna River, Northwest Territories -- 106 M and 107 B (Pt. of); Geol. Surv. Can., Paper 59-14.

JOHNSTON, J.R. 1936. A reconnaissance of Pelly River between MacMillan River and Hoole Canyon, Yukon; Geol. Surv. Can., Mem. 200 (Includes Map 394A).

JOHNSTON, J.R. 1937. Geology and mineral deposits of Freegold Mountain, Carmacks District, Yukon; Geol. Surv. Can., Mem. 214 (Includes Map 450A).

JOHNSTON, R.A.A. 1915. A list of Canadian mineral occurrences; Geol. Surv. Can., Mem. 74.

KEELE, J. 1910. A reconnaissance across the Mackenzie Mountains on the Pelly, Ross and Gravel Rivers, Yukon and Northwest Territories; Canada, Dept. of Mines, Geol. Surv. Br., Publication No. 1097.

KINDLE, E.D. 1945. Geological reconnaissance along the Canol Road, from Teslin River to Macmillan Pass, Yukon; Geol. Surv. Can., Paper 45-21 (Including Preliminary Map 45-21A).

KINDLE, E.D. 1953. Dezadeash map-area; Geol. Surv. Can., Mem. 268 (Includes Map 1019A).

KIRKHAM, R.V. 1971. Geology of copper and molybdenum deposits; Page 85 In Rept. of activities, Pt. A: April to October, 1970. Geol. Surv. Can., Paper 71-1A.

LEES, E.J. 1936. Geology of Teslin-Quiet Lake area, Yukon; Geol. Surv. Can., Mem. 203.

LITTLE, H.W. 1959. Tungsten deposits of Canada; Geol. Surv. Can., Econ. Geol. Series. No. 17.

LORD, C.S. 1944. Geological reconnaissance along the Alaska Highway between Watson Lake and Teslin River, Yukon and B.C.; Geol. Surv. Can., Paper 44-25 (Includes Prelininary Map 44-25A).

McCONNELL, R.G. 1890. Report on an exploration in the Yukon and Mackenzie Basins, N.W.T.; Geol. and Nat. Hist. Surv. Can., Annual Report 1888-89, Vol. 4D, p. 5-144.

McCONNELL, R.G. 1902. Report on the Klondike gold fields; Geol. Surv. Can., Annual Report (n.s.) for 1901, Vol. 14B, p. 1-71 (Includes Maps 772, 885, 886). Or Geol. Surv. Can., Publication No. 884.

McCONNELL, R.G. 1903. The MacMillan River, Yukon District; Geol. Surv. Can., Annual Report for 1902-1903, Vol. XV-A, p. 22-38.

McCONNELL, R.G. 1903. Exploration of the Stewart River from its mouth to Fraser Falls, the Yukon between Stewart and Cliff Creek and the Whitehorse Copper deposits, Yukon; Pages 38-52A In Dawson, G.M. Summary report of the Geol. Surv. Dept. for the year 1900, by the Director; Pages 1-38 In Bell, R. Annual Report for 1900. Geol. Surv. Br., Annual Report for 1900, Vol. 8A.

McCONNELL, R.G. 1904. Klondike District, Yukon Territory; Geol. Surv. Can., Summ. rept. for 1903. Vol. XV-AA, p. 34-42.

McCONNELL, R.G. 1905. The Kluane mining district; Geol. Surv. Can., Annual (or summary) Rept. for 1904, Vol. XVI-A, p. 1-18 (Includes Map 894).

MOFFIT,F.H., KNOPF,A. 1910. Mineral resources of the Nabesna-White River District, Alaska; U.S. Geological Survey, Bulletin 417, p. 51-57. (See also U.S.G.S. Bulletin 379, p. 161-180).

MORIN, J.A., SINCLAIR, W.D., CRAIG, D.B., MARCHAND, M. 1977. North of 60 - Mineral Industry Report, 1976, Yukon Territory; Canada, Dept. of Indian Affairs and Northern Development, Report EGS 1977-1.

MORIN, J.A., MARCHAND, M., CRAIG, D.B., DEBICKI, R.L. 1979. North of 60 - Mineral Industry Report, 1977, Yukon Territory; Canada, Dept. of Indian Affairs and Northern Development, Report EGS 1978-9.

MORIN, J.A., MARCHAND, M., DEBICKI, R.L. 1980. Mineral Industry Report, 1978, Yukon Territory; Canada, Dept. of Indian Affairs and Northern Development.

MULLER, J.E. 1967. Kluane Lake map-area, Yukon Territory (115 G, 115 F (East half)). Geol. Surv. Can., Mem. 340 (Includes Maps 1177A and 1178A).

MULLIGAN, R. 1963. Geology of Teslin map-area, Yukon Territory (105 C); Geol. Surv. Can., Mem. 326 (Including Map 1125A).

MULLIGAN, R.H. 1975. Geology of Canadian tin occurrences; Geol. Surv. Can., Geol. Rept. No. 28, 155 pp.

NORRIS, D.K. 1974. Structural and stratigraphic studies in the northern Canadian Cordillera; Pages 343-349, Geol. Surv. Can., Paper 74-1A.

NORRIS, D.K. 1975. Hart River (116 H), Wind River (106 E) and Snake River (106 F) geology maps; Geol. Surv. Can., Open File Rept. 279.

NORRIS, D.K. 1976. Structural and stratigraphic studies in the Northern Canadian Cordillera; Pages 457-466, Geol. Surv. Can., Paper 76-1A.

NORRIS, D.K. 1977. Geological maps of Yukon Territory and Northwest Territories, (117 A,B,C,D); Geol. Surv. Can., Open File 499.

NORRIS, D.K. (COMP.) 1980. Geology, Northern Yukon Territory and Northwestern District of Mackenzie; Geol. Surv. Can., Open File Rept. 715.

NORRIS, D.K. 1981. Geology, Ogilvie River map-area, northern Yukon Territory, (116 F, E 1/2); Geol. Surv. Can., Open File 783.

NORRIS, D.K. 1981. Geology of Blow River map-area, Yukon Territory (117 A); Geol Surv. Can., Map 1516A.

NORRIS, D.K. 1981. Geology of Old Crow map-area, Yukon Territory, (116 N,O); Geol. Surv. Can., Map 1518A.

NORRIS, D.K. 1981. Geology of Bell River map-area, Yukon Territory, (116 P); Geol. Surv. Can., Map 1519A.

NORRIS, D.K. 1981. Geology of Porcupine River map-area, Yukon Territory, (116 J,K); Geol. Surv. Can., Map 1522A.

NORRIS, D.K. 1981. Geology of Eagle River map-area, Yukon Territory (116 I); Geol. Surv. Can., Map 1523A.

NORRIS, D.K. 1981. Geology of Trail River map-area, Yukon Territory (106 L); Geol. Surv. Can., Map 1524A.

NORRIS, D.K. 1981. Geology of Martin House map-area, Yukon Territory (106 K); Geol. Surv. Can., Map 1525A.

NORRIS, D.K. 1982. Geology of Ogilvie River map-area, Yukon Territory (116 F,G); Geol. Surv. Can., Map 1526A.

NORRIS, D.K. 1982. Geology of Hart River map-area, Yukon Territory (116 H); Geol. Surv. Can., Map 1527A.

NORRIS, D.K. 1982. Geology of Wind River map-area, Yukon Territory (106 E); Geol. Surv. Can., Map 1528A.

NORRIS, D.K. 1982. Geology of Snake River map-area, Yukon Territory (106 F); Geol. Surv. Can., Map 1529A.

PADGHAM, W.A. 1976. North of 60 - Mineral Industry Report 1973, Northwest Territories; Dept. of Indian Affairs and Northern Development. Report EGS 1976-9.

POOLE, W.H. et al. 1960. Geology, Wolf Lake, Yukon Territory; Geol. Surv. Can., Preliminary Map 10-1960.

READ, P.B., MONGER, J.W.H. 1976. Geology and mineral deposit maps of Kluane and Alsek ranges, Yukon Territory (parts of 115 A,B,G); Geol. Surv. Can., Open File Report 381.

RODDICK, J.A., GREEN, L.H. 1961. Geology, Tay River, Yukon; Geol. Surv. Can., Preliminary Map 13-1961.

RODDICK, J.A., GREEN, L.H. 1961. Geology, Sheldon Lake, Yukon; Geol. Surv. Can., Preliminary Map 12-1961.

SINCLAIR, W.D., GILBERT, G.W. 1975. North of 60 - Mineral Industry Report 1973, Yukon Territory; Canada, Dept. of Indian Affairs and Northern Development, Northern Natural Resources and Environment Branch, Report EGS 1975-7.

SINCLAIR, W.D., et al. 1975. North of 60 - Mineral Industry Report 1974, Yukon Territory; Canada, Dept. of Indian Affairs and Northern Development, Northern Natural Resources and Environment Branch, Report EGS 1975-9.

SINCLAIR, W.D., et al. 1976. Mineral Industry Report 1975, Yukon Territory; Canada, Dept. of Indian Affairs and Northern Development, Report EGS 1976-15.

SKINNER, R. 1961. Mineral industry of Yukon Territory and southwestern District of Mackenzie, 1960; Geol. Surv. Can., Paper 61-23.

SOUTHER, J.G., STANCIU, C. 1975. Operation Saint Elias, Yukon Territory: Tertiary volcanic rocks; Pages 63-70 In Rept. of activities, Pt. A: April to October, 1974. Geol. Surv. Can., Paper 75-1A.

TEMPELMAN-KLUIT, D.J. 1965. Tombstone River (116 B 7) map-area; Pages 35-36 In Rept. of activities: Field, 1964. Geol. Surv. Can., Paper 65-1.

TEMPELMAN-KLUIT, D.J. 1972. Geology and origin of the Faro, Vangorda, and Swim concordant zinc-lead deposits, central Yukon Territory; Geol. Surv. Can., Bull. 208.

TEMPELMAN-KLUIT, D.J. 1974. Reconnaissance geology of Aishihik Lake, Snag and part of Stewart River map-areas, west central Yukon; Geol. Surv. Can., Paper 73-41 (Includes Maps 16-1973, 17-1973, 18-1973).

TEMPELMAN-KLUIT, D.J. 1974. Geology of Carmacks area, Yukon Territory; Geol. Surv. Can., Open File 200.

TEMPELMAN-KLUIT, D.J. 1974. Geology, Quiet Lake, Finlayson Lake, Sheldon Lake and Tay River map-areas, Yukon Territory (105 F,G,J and K); Geol. Surv. Can., Open File 212.

TEMPELMAN-KLUIT, D.J. 1977. Geology of Quiet Lake (105 F), and Finlayson Lake (105 G) map-areas, Yukon Territory; Geol. Surv. Can., Open File Report 486.

TEMPELMAN-KLUIT, D.J. 1978. Geological map of the Laberge map-area (105 E), Yukon Territory; Geol. Surv. Can., Open File Rept. 578.

TEMPELMAN-KLUIT, D.J. 1979. Transported cataclasite, ophiolite and granodiorite in Yukon: evidence of arc-continent collision; Geol. Surv. Can., Paper 79-14.

TEMPELMAN-KLUIT, D.J., ABBOTT, J.G., READ, B. 1974. Stratigraphy and structure of Pelly Mountains; Pages 43-44 In Rept. of activities, Pt. A., Geol. Surv. Can., Paper 74-1A.

TENNEY, D. 1981. The Whitehorse Coper Belt: Mining, Exploration and Geology (1967-1980). Bulletin 1, Dept. of Indian Affairs and Northern Development, Geology Section Publication, 29 pp.

VOKES, F.M. 1963. Molybdenum deposits of Canada; Geol. Surv. Can., Economic Geology Rept. No. 20.

WHEELER, J.O. 1961. Whitehorse map-areas; Geol. Surv.Can., Memoir 312 (Includes Map 1093A).

WHEELER, J.O. 1963. Geology, Kaskawulsh (Mount St. Elias, East half) Yukon Territory; Geol. Surv. Can., Map 1134A.

WHEELER, J.O., et al. 1960. Geology, Quiet Lake, Yukon Territory; Geol. Surv. Can., Preliminary Map 7-1960.

YOUNG, F.G. 1972. Cretaceous stratigraphy between Blow and Fish Rivers, Yukon Territory; Pages 229-234 In Rept. of activities, Pt. A: April to October, 1971. Geol. Surv. Can., Paper 72-1A.

INDEX

A (105 B).. 101
A (105 D).. 118
A (115 P).. 217
ABBA........................... 13,105,106,109
ABBEY.. 135
Abbott, G........................... 2,3,18,67
A+B,C+D.................................. 112,118
Aberford Resources Limited.................. 8,164,168
Aber Resources Limited........................ 215
ABI.. 111
ABRAHAM.. 141
AC.. 211
ACE (105 D).. 111
ACE (105 L)........................ 8,10,149,150
ACE (105 O).. 164
ACE (115 I).. 201
ACE (115 P)................................ 215,217
ACHERON.. 223
ADAMSON.. 141
ADDY.. 123
ADUB.. 179
AGIP Canada Limited......... 4,10,13,14,71,114,116,117
.... 118,124,139,163,164,168,169
AH.. 197
AHEARNE................................ 179,181
AIME.. 210
AINE.. 219
AIRBORNE.. 127
AIRSTRIP.. 175
AIRWAYS................................ 193,195
AISHIHIK.. 197
Aishihik Lake.. 13
Aishihik Lake map-area........................ 196-198
AJ.. 227
A.J................................ 223,227
AKEL.. 121
AL (106 C).. 175
AL (115 I)................................ 201,204
ALBATROS.. 112
ALBERT.. 91
Aldis Creek.. 156
ALE.. 175
ALEC................................ 12,180
ALGAE.. 175
ALLIGATOR.. 111
ALLISON.. 111
ALM.. 131
ALMOST.. 95
ALP................................ 163,168
ALTA.. 143
ALTO.. 233
AM........................... 15,137,138,139
Amax of Canada Limited......... 4,8,10,11,12,16,97,124
.... 129,157,165,166,169,216
AMBROSE.. 123
AMN.. 112
Amoco Canada Petroleum Limited.............. 4,13,106
A.M.P. Exploration and Mining Limited....... 14,97,101
AMPHITHEATER.. 193
AM-PM.. 147
Anaconda Canada Exploration Limited.... 8,10,11,16,144
.... 148,149,150
AND................................ 12,144
ANDESITE................................ 197,198
ANDREA.. 161
ANDY (105 O).. 163
ANDY (106 B).. 173
ANGIE.. 123
ANGLO.. 175
Anglo Western Minerals Ltd.................. 226
ANISE.. 123
ANNE.. 96
ANNI........................... 95,98,101
Annie Lake.. 118
Anniv.. 11
ANT........................... 15,95,101
ANVIL.. 142
Anvil Range.. 144
APE........................... 15,175,176
APEX.. 151
ARC.. 14
Archer, A.R........................... 84,85,86,91
Archer, Cathro and Associates Limited.... 4,8,10,12,14
.... 15,18,79,81,84,86,87,89,91,116,125,128,129,176
...... 180,181,183,184,185,194,201,202,224,225,226,227
Archibald, D................................ 89,133
ARCTIC.. 111
Arctic Red Resources........................ 14
ARCTOS.. 179
ARGENT.. 151
ARGO.. 163
ARIES.. 210
ARKELL.. 111
ARMSTRONG.. 161
ARO.. 141
ARROWHEAD.. 163
Arscott, D.. 91
ART.. 111
A.S................................ 10,101
Ashley, C.. 227
ASKIN.. 123
ASS.. 223
ATHES.. 112
Atlantic Energy Corp........................ 108
Atlas Exploration........................ 149
ATOM.. 95
AUP........................... 12,91,92
AUREOLE.. 161
AURIER.. 121
AURORA (105 B)................................ 95,101
AURORA (105 H).. 131
Aurun Mines Ltd........................ 108
Aussant, C.H.. 234
AUSTON.. 219
AVENUE.. 151
AYDUCK.. 123
AXE.. 127
Ayres, L.D.. 71
AZTEC (105 M).. 151
AZTEC (115 J-K).. 207
B.. 118
B.A. Resources Ltd........................ 101
BACHUS.. 112
BACON.. 121
BAG.. 179
BAK.. 175
BALD EAGLE.. 210
BALDY.. 223
BAND.. 121
BANDER.. 215
BANG ON................................ 16,229
BAR (105 B)................................ 95,101

BAR (105 C).......... 11,105
BAR (105 D).......... 112
BAR (105 O).......... 8,163,167
BARB (105 B).......... 97,101
BARB (105 F).......... 124
BARETTE.......... 223
Barite Mountain.......... 124,144
BARITE MOUNTAIN.......... 123,124
BARKER.......... 179
Barlow Creek.......... 50
BAS.......... 105
Bastien, N.......... 101
BASIN (105 O).......... 8,164
BASIN (106 E).......... 183
BASTILLE.......... 96
BATES.......... 189
BATRICK.......... 207
BBOB.......... 163,168,169
BE NO. 1,2,3,4.......... 151
BEA (105 B).......... 10,95,101
BEA (105 K).......... 141
BEAR (105 C).......... 108
BEAR (116 N-O).......... 233
BEAU.......... 10
BEAUCHAMP.......... 163
BEAV.......... 81
BEAVERCROW.......... 81
Beavon, R.V.......... 215
BECKER-COCHRAN.......... 111
BEE (105 E).......... 121
BEE (105 I).......... 135
BEE (115 P).......... 216
BELCARRA.......... 219
Belleview Point.......... 50
Bell River map-area.......... 232,233
BELOUD.......... 189
BEMA INDUSTRIES.......... 10
BEN (105 D).......... 111
BEN (105 O).......... 163
BEN (115 P).......... 215
Bendiyen, R.......... 139
Bennett Lake.......... 115
BE NO. 1.......... 151
BE NO. 2.......... 151
BE NO. 3.......... 151,157
BE NO. 4.......... 151,157
BERESFORD.......... 111
BERN.......... 233
BERNEY.......... 111
BERT.......... 144
BERYL.......... 95
BESSEY.......... 95
BETA.......... 141
BEV.......... 183
BEXI.......... 112
BIBBER.......... 175
BICZOK, J.......... 225
BID (105 F).......... 123
BID (115 J-K).......... 201
BIG.......... 10,13,124,125,128
BIG OX.......... 123
BIG SAM.......... 123,124,125
Big Salmon Complex.......... 13
Big Salmon River.......... 121
BIG THING.......... 111
BILBO..........229
BILL.......... 137,224
Billiton Canada Ltd.......... 2,26,32,156,216,217
BINGO.......... 128
BINGY.......... 95
BIRR.......... 135
BIRCH (115 F-G).......... 194
BIRCH (116 B).......... 227
BIRKELAND.......... 173
BISHOP.......... 210
BISMARK.......... 210
BLACK.......... 91
BLACKCAP.......... 154
BLACK FOX.......... 210
BLACK IDA.......... 175
BLACKIE.......... 12,157
BLACK JACK.......... 131
BLACK ROCK.......... 95
BLACKSTONE.......... 223
BLACKWOOD.......... 141
Blanchflower, J.D.......... 83
Bland, P.......... 125
BLIND.......... 141
BLOOM.......... 161
Blow River map-area.......... 232,234
BLUE.......... 141
BLUEBERRY.......... 127
BLUE LITE.......... 179
BLUFF.......... 201
Blusson, S.L.......... 89,131,161,163,171,173,175
BNOB.......... 123
BOB (105 F).......... 123
BOB (105 G).......... 127
BOB (106 C).......... 175
BOB (106 D).......... 180
BOB CAT.......... 141
BOB NOB.......... 163
BOBO.......... 111
BOJO.......... 137
BOM.......... 95,96
BOMBER.......... 207
Bonanza Creek.......... 17,211
BONANZA KING.......... 201
BOND (105 E).......... 121
BOND (106 D).......... 179
BONNET (106 C).......... 175
BONNET (117 A).......... 234
Bonnet Plume map-area.......... 172-173
BOOM.......... 123
BOOT.......... 128
BORD (105 O)..........163,169
BORD (115 N-O).......... 210
BORDER.......... 95
BOREAL.......... 207
BOSTOCK.......... 111
Bostock, H.S.......... 151
BOT.......... 127
BOU.......... 234
BOUDETTE.......... 111
BOULDER.......... 215
Boulder Creek.......... 27
BOW (105 G).......... 128
BOW (115 I).......... 201
BOX.......... 123
BOX CAR.......... 210
BOY.......... 95
BOYLE (116 A).......... 219,220
BOYLE (116 B-C).......... 223
BOYLEN.......... 201
BOZ.......... 83
BOZO.......... 179
BR.......... 131
B.R.......... 123

BRAB.......... 141
BRADENS CANYON.......... 201
BRAINE.......... 179
BRANDY.......... 179
BREFAULT.......... 147
BRENDON.......... 179
BRI.......... 175
BRICK.......... 207
BRIDEN.......... 14,164
BRIE.......... 141
Brinco Mining Limited.......... 123
BROAD-LEDGE.......... 15,85,164,225
BROCK.......... 223
Brock, J.S.......... 163
BROD.......... 145
BRODELL.......... 131
Broeren, J.......... 161
BROMADROSIS.......... 3
BROOKS.......... 175
BROTEN.......... 194
BROWNIE.......... 131
Brown, G.R.......... 226
Brown, L.J.......... 164
BROWN-McDADE.......... 217
Brown, P.......... 201
BRUCE LAKE.......... 106
BRUK.......... 123
BRUMMER.......... 219
BRX (105 B).......... 194
BRX (116 B-C).......... 10,95,101
BRX Mining and Petroleum Corp. Ltd... 223
BS.......... 10,11,96,101,203
BUCHANAN.......... 141
BUCKLAND.......... 111
BUCONJO.......... 210
BUD.......... 154
BUFFALO (105 D).......... 210
BUFFALO (115 H).......... 111
BUG (105 C).......... 197
BUG (106 D).......... 13,106
BUH.......... 181
BULLION.......... 187
BULLIS.......... 191
BUM (105 L).......... 233
BUM (115 N-O).......... 10,11,147,150
BUN.......... 210
BUR.......... 197
BURGOYNE.......... 15
BURMEISTER.......... 229
Bur Syndicate.......... 210
BURWASH.......... 15
Burwash Creek.......... 193
BUS.......... 194
BUSH.......... 131
BUT.......... 8,149,150
BUTLER.......... 179
Butte Creek.......... 210
Butterworth, L.......... 69,70
.... 3

C.......... 118
CAB (105 F).......... 12,124
CAB (106 C).......... 175
CABIN (105 B).......... 95
CABIN (105 O).......... 165,169
CADET.......... 175
CAESAR.......... 89
CAL.......... 10,15,106,109
CALEY.......... 223
Caley Mine.......... 226
Caley Pit.......... 25
CALGAL.......... 123
CALIFORNIA.......... 207
CAMERON.......... 179
CAMPBELL.......... 127,147
Campbell, K.V.......... 175
Campbell, R.B.......... 107,189,191,193
Campbell Resources Incorporated.......... 216,217
CAN (105 B).......... 95
CAN (115 G-F).......... 10,194,195
CAN (116 A).......... 219
Canada Reserve Oil and Gas Limited.......... 180
Canada Tungsten Mining Corporation Ltd..... 4,10,12,14
.... 157,158,180,216
Canadian Johns-Manville Co. Ltd.......... 226
Canadian Nickel Company Limited....... 8,13,14,114,121
Canadian Occidental Petroleum Limited.......... 198
Canadian Superior Exploration Limited.......... 8,180
CANALASK.......... 193
Canalta Resources Limited.......... 219
Canam, T.......... 203
CANUSA.......... 123
CANWEX.......... 175
CANYON.......... 131,132
CAR.......... 201
CARB.......... 234
CARCROSS.......... 111
CARIBOU.......... 95
CARIBOU BORN.......... 233
CARIBOU CREEK.......... 201
Carleton University.......... 2,26
CARLICK.......... 95
Carmacks map-area.......... 200-204
CARNE.......... 175
CAROL (105 A).......... 91
CAROL (116 C).......... 224
CAROLYN.......... 137
CARPENTER.......... 179
CASCA.......... 141
CASH.......... 201
CASHBOX.......... 91
CASINO.......... 207
Cassiar Asbestos Corporation Limited........ 18,85,224
.... 225,226
CASSIAR BAR.......... 121
Cassiar Creek.......... 25
Cassiar Mountains.......... 11,98
CAT.......... 141
Cathro, R.J.......... 85,89,224
CATO.......... 211
CATS AND DOGS.......... 193,195
CAVE (105 L).......... 148
CAVE (115 A).......... 189
CC.......... 12,216
CCH Minerals Limited.......... 156
Cecile, M.P.......... 151,161,163,171, 173,175,179,233
CEDAR.......... 224,227
CELESTIAL.......... 91
CEMENT.......... 193
Central Electricity Generating Board of London..... 15
CER.......... 10,95,101
CESSNA.......... 141
CHAIN.......... 223
CHAIR.......... 207
CHAMP.......... 4,11
CHANCE.......... 151
CHANDINDU.......... 223
CHAP.......... 131

CHAPLIN ... 141
CHAPMAN ... 223
CHAPPIE ... 183
CHAR ... 124
CHARLESTON ... 111
CHARLIE (95 E) ... 89
CHARLIE (115 A) ... 189
Chevron Canada Limited ... 105
Chevron Standard Ltd ... 11,216
CHICKALOON ... 189
CHIEF ... 10,13,116,118
Chieftain Hill ... 116
CHLOE ... 183
CHOW ... 127
Chretian, F ... 118
CHRIS ... 105
CHRISTAL ... 151
CHRISTINE ... 151
CHU ... 83
CHUCK ... 141,142
CHUNG ... 123
CHUNGO ... 83
CHZERPWOUGH ... 123
CIM ... 210
Cima Resources Limited ... 14
CIRQUE ... 175
CIVI ... 141,143
CJ ... 91
C.J ... 180
CLAIRE ... 121
CLARE ... 8,149,150
CLARK ... 179
Clarke Peak ... 12
CLEAR CREEK ... 215,216
Clear Creek ... 2,12,50,51,52,53
CLEAR LAKE ... 147,148
Clear Lake ... 148
CLEAVES ... 151
Clemmen, S ... 143
CLIFF ... 223
CLINGON ... 137
CLINTON CREEK ... 223,224,227
Clinton Creek ... 2,16,18,21,22,23,25,224
Clinton Mine ... 5,16,225,226
CLIP ... 223
CLO ... 123
CLOUTIER ... 179
CLYDE ... 137
CMC ... 96
CO (105 B) ... 95
CO (115 J-K) ... 207
COAL RIDGE ... 111
Coal River ... 12,85
Coal River map-area ... 2,82-87
COAST ... 175
COB ... 175
COBALT ... 151
COCKFIELD ... 207
COFFEE ... 207
COIN ... 201
COLLEGE GREEN ... 111
COLLEEN ... 179
COLLIERY ... 223
COLT ... 141,143
COM (105 B) ... 95,100
COM (115 I) ... 201
COMANCHE ... 201
COMBO ... 201
COMBS ... 111
COMET ... 210
Cominco Limited ... 4,8,11,13,97,112,118
... 132,148,164,220,225
COMSTOCK ... 151,156
CON ... 141
CONE HILL ... 223
CONGDON ... 193
CONNAUGHT ... 210
CONNELL ... 123
CONWEST ... 147
Conwest Exploration Ltd ... 226
COOKER ... 175
COOT (115 H) ... 13,197
COOT (116 F-G) ... 229
Copland, H.J ... 115,117
CORD ... 179
Cordilleran Engineering ... 11,97,98
CORDUROY ... 121
CORK ... 193
CORN CREEK ... 175
CORRIE ... 131
Corsair Petroleum Ltd ... 108
COSTIN ... 137
COWARD ... 141
COXALL ... 123
CPA ... 123
CRAG ... 210
CRAIG ... 175
Craig, M ... 71
CRAWFORD ... 223
Crawford, W.J ... 145
CRE ... 10,95,101
CREAM ... 89
CREAM AND JEAN ... 151
CREE ... 163
CREST ... 187
CRIPPLE ... 224
CRO ... 111
CROCK ... 207
CROMWELL ... 111
CROOKED ... 215
CROSSING ... 201
CROST ... 121
CROWN ... 141
CRUIKSHANK ... 210
Cruikshank, R.D ... 210
CUB ... 141
CUB Joint Venture ... 85,89
Cukor, J ... 118
Cukor, V ... 96
CUNG ... 231
CUS ... 183
CUTOFF ... 111
CUZ ... 12,83,84
Cygnus Mines Limited ... 11
CYLINDER ... 231
CYPRUS ... 201
Cyprus Anvil Mining Corporation Ltd ... 4,5,6,11,132
... 142,144,183,184
CYR (105 F) ... 123
CYR (105 G) ... 128

D ... 118
DALE (105 B) ... 95,96,100
DALE (116 A) ... 15,219,220
DALTON ... 189
DAN ... 175

DANA ... 141
DANGER ... 123
DART (115 I) ... 201
DART (116 B) ... 227
DAVE (105 B) ... 100
DAVE (106 D) ... 180
DAVID ... 12,157
Davis, J.W ... 234
DAWG ... 223
DAWN ... 111
Dawson Eldorado Gold Explorations Ltd. ... 211
Dawson map-area ... 2,222-227
Dawson Range ... 2,38
DAYIR ... 112,116
Dayton Creek Silver Mining Limited ... 100
DB ... 105,106
D.BURKE ... 179
DC ... 131
D.C. Syndicate ... 4,13,15,97,106,107
DD ... 201
DE ... 211
DEA ... 175
DEADMAN ... 105
DEAL ... 179
DEAN ... 161
DEB ... 111,114
Debicki, E.J ... 114
Debicki, R.L ... 2,4
DECOELI ... 189
DEEK ... 10,81
DEER ... 183
DELAY ... 141
Delta Petroleum Ltd. ... 108
DEM ... 223
DEMON ... 15,183,185
DEN ... 194,195
Denton, A.S ... 108
DESTRUCTION ... 193
DEV ... 141
DEVILHOLE ... 189
Dezadeash map-area ... 188-189
DF ... 175
DG ... 141
D.G ... 180
DI ... 195
DIAMOND ... 151
DIANNE ... 135
Dickey, B ... 101
DICKSON ... 193
DIM ... 131
DIRK ... 123
DIVIDE ... 201
DIVISION ... 197
DJ ... 175
DK ... 83,85,86
DL ... 210,212
D.L. (115 O) ... 10
DN ... 211
DOBBY ... 175
Dodds, C.J ... 189,191,193
DODGE ... 131
DODY ... 123
Doey, L ... 217
Doherty, R.A ... 71,116
DOL ... 127
DOLE ... 210
DOLORES ... 175
Dolores Creek ... 15
DOME (105 B) ... 95
DOME (115 I) ... 201,204
Dome Petroleum Ltd. ... 144
DOMINION ... 210,211
Donjek River ... 194
DONKEY ... 111,118
Donnelly, J ... 180
Dool, N ... 118
DOOLY ... 118
DOORMAT ... 210
DOPE ... 151,157
DOT (105 D) ... 112
DOT (105 K) ... 141
DOUG ... 131
Douglas, R.J.W ... 81
Doyle, P.J ... 133
DOYLE ... 207
DOWSER ... 175
DRAGON ... 137
DRESEN ... 179
DRILL ... 12,151,157
DROC ... 123
Dromedary Montain ... 8,150
DRURY ... 147,148
DRY ... 105
D'Silva, B ... 3
DTS ... 183
DU ... 95
DUB ... 127
DUBLIN GULCH ... 12,27,179,180
DUENSING ... 193
DUGDALE ... 111
DUFFY ... 81
DUKE ... 193
DULUTH ... 191
Dumouchel, J ... 164
DUNCAN ... 151
DUNE ... 175
DUNK ... 111,115
DUO (105 L) ... 147
DUO (105 O) ... 163
Du Pont of Canada Exploration Limited ... 96,101,108
... 115,116,117,118,121
Duval Mining Limited ... 96
DWARF ... 194
DWONK ... 128
DY ... 4,143
DYAK ... 137
DYKE ... 229
Dyson, C.V ... 105

EAGLE (105 G) ... 11,127,128,129
EAGLE (105 M) ... 151
Eagle River map-area ... 232-234
EARN ... 8,149
Earn Lake ... 4,149
Easter Creek ... 15
Eastmure, D ... 118
EAST RIDGE ... 215,216
EATON ... 179,180
Eaton, W.D ... 116,176,180,183,184,194,201,202
Ebony Resources Ltd. ... 212
ECONOMIC ... 173
EDY ... 83
EFFIE ... 111
EG ... 175
EIRA ... 175
EKO ... 131

EL (105 G)........ 127
EL (115 G)........ 10,194,195
ELBOW........ 229
Eldorado Creek........ 211,212
Eldorado Dome........ 211
Eldorado Nuclear Ltd........ 16,198
Eldor Resources Limited........ 210
ELECTRIC........ 127,128,129
ELEVENTHIRTY........ 194
ELGEA........ 175
ELGIN........ 175
ELLE........ 189
ELLIOT RIDGE........ 95
ELLIS........ 179
Ellis, G........ 179
ELSA........ 91
EMERA........ 6,156
EMERALD........ 163
Emerald Creek........ 163
Emerald Lake........ 14
EMILY........ 13,164
EMMON........ 91
EMMY........ 201
Emond, D.S........ 14,163,166
EMPTY........ 2,26
ENCHANTMENT........ 137
END........ 210
Energex Minerals Limited........ 147
England, T........ 175
ENOF........ 63
Enterprise Exploration........ 121
ENVOY........ 16
EPD........ 175
EPIC........ 2,26,27,30,32,215,217
ERGE........ 193
ERIN........ 112
EROS........ 179
ESANSEE........ 123
Esperanza........ 201,203
ESS........ 145
Essex Minerals Canada Ltd........ 163
Esso Resources Canada Ltd........ 10,148
ETC........ 128
ETHELDA........ 223
Ethel Lake........ 223
ETZEL (105 N)........ 12
ETZEL (105 O)........ 161
EVA (105 F)........ 14,163,167
EVA (105 K)........ 123
EVEN........ 141
EVENING........ 115
EVIEW........ 116
EVING........ 112,117
EWING........ 210
EXCELSIOR........ 201
Exploram Minerals Ltd........ 210
.... 15,225

FACE........ 179
FAIR........ 175
FAIRCHILD........ 175
Fairchild Creek........ 175,176
FAITH........ 151
FAL........ 8,163,167
Falconbridge Limited........ 202,203
FALL........ 10,95,101
FALSE........ 91
FAN........ 8,163,166
FAR........ 85

FARGO........ 141
FARO........ 141,143
FAST........ 10,135
FAWCETT........ 210
FED........ 201
FEEBLE........ 151
FELIX........ 147
FENTON........ 189
FER........ 123
FERGUSON........ 189
FETCH........ 8,163,164
FETISH........ 127,128,129
FF........ 13,108
F.F. Slaney and Company Limited........ 79
FH........ 127,129
FIBRE........ 223
FIDDLER........ 95
Fierro, H........ 100
FIF........ 223
FIFTEEN MILE........ 223
FIFTY........ 210
FIFTY TWO........ 195
FIL........ 15,203
FIN........ 11,131,132
FINGER........ 111
Finlayson Joint Venture........ 128
Finlayson Lake map-area........ 126-129
FIONA........ 215
FIRE........ 10,13,163
FIREWEED........ 223
FIRST........ 123
FIR TREE........ 131
FISHER........ 151
FISHHOOK........ 141
FISHING BRANCH........ 233
FISH LAKE........ 111
Fish Lake........ 116
FIVE FINGERS MINE........ 201
FLAG........ 217
FLAGSTONE........ 141
FLASH........ 8,180
FLAT (105 D)........ 112
FLAT (106 E)........ 15,184,185
FLATASA........ 161
Flat River map-area........ 88-89
FLEMING........ 111
FLIN........ 127
FLIP........ 131
FLO (105 B)........ 101
FLO (105 M)........ 151,157
FLOAT........ 121
FLON........ 127
FLUKE........ 131
FLUME........ 210
FLUNK........ 183
FM........ 114
FOG (105 G)........ 127
FOG (105 O)........ 163
FOG MOUNTAIN........ 121
FOHU........ 179
FOO........ 141,144
FORBES........ 179
FORD........ 179
FORMO........ 151
FORSTER........ 183
FORSURE........ 105
FOSTER........ 201
FOTHERGILL........ 210

FOTO ... 141
FOUND ... 179
FOXY ... 223
FRAN ... 179
FRANCES ... 131
Frances Lake ... 11
Frances Lake map-area ... 130-133
Frances River ... 91
Fraser, G. ... 165,166,167
FRED (105 G) ... 128
FRED (105 M) ... 157
Freegold Mountain ... 14
FREGERG ... 127
FRESNO ... 223
FREISEN ... 151
C.W. Friday Contracting ... 124
FRIGSTAD ... 175
FROG ... 201
FROGGY ... 223
FRONT ... 147
FULLER ... 137
FUN (105 O) ... 163,165
FUN (106 C) ... 175
FUR ... 95
Furniss, R. ... 181
FURY ... 123
FYIQ ... 89
FYRE ... 127

GABE ... 83
Gabrielse, H. ... 83,89,91
GAL ... 175
Galena Hill Mine ... 154
GALLOPING ... 193
GAMBLER ... 151
GAMMON ... 14,111,114
Garagan, T. ... 163,164
Gardener, V. ... 233
GARLIC ... 193,194
Gay Gulch ... 212
GE (105 A) ... 10,12,91,92
GE (105 L) ... 147
GEE (105 D) ... 111
GEE (105 G) ... 127
GEL ... 131
GEM (105 B) ... 95
GEM (105 E) ... 121
GEN ... 221
General Resources Ltd. ... 10,121
GENTRY ... 175
GEORDIE ... 175
George R. Kent and Associates Ltd. ... 12
GERLITZKI ... 151
GERM ... 121
GERMAINE ... 223
GET ... 148
Getty Canadian Metals Ltd. ... 4,10,98,99,143,148,149
Getty Minerals Ltd. ... 184
GIANT ... 201
GIBBONS ... 191
GIG ... 229
GILDERSLEEVE ... 175
GILLESPIE ... 175
GILTANA ... 197
GK ... 123
GLAC ... 10,226,227
GLEN (105 B) ... 95,102
GLEN (106 C) ... 175
GLEN (115 F-G) ... 193,194,195
GLENLIVET ... 10,14,112,117,118
GLENLYON LAKE ... 147
Glenlyon map-area ... 146-150
GLENNA ... 131
GNUCKLE ... 179
GOAT ... 95
GOODELL ... 111
Godwin, C. ... 32,76
GOLCONDA ... 111
GOLD ... 207
GOLD HILL ... 111
Gold (Placer) ... 17,34,50
GOLD QUEEN ... 151
GOLD REEF ... 111
GOLD RUN ... 210
GOLDEN DUKE ... 151,158
GOLDEN ROD ... 210
Gold Run Investors ... 16
Golden Slipper Resources Ltd. ... 14
Goldex Resources Inc. ... 102
Goldmark Minerals ... 16
GOLF ... 161
GONZO ... 128
Goodlife, S. ... 195
GOODMAN ... 175
GOPHER ... 123,124
Gordey, S.P. ... 135,163,171
GORDON ... 151
GOULTER ... 201
GOZ CREEK ... 175
G.P. ... 101
GRACE ... 219
GRAF ... 147
GRANITE MOUNTAIN ... 201
Grapes, K. ... 2,3,4
GRAPS ... 224
GRASS ... 127
GRAVE ... 223
GRAY (105 F) ... 123
GRAY (106 D) ... 179
GRAYLING ... 123
Grayling Creek ... 2,34
GREAK ... 15,197,198
Green, L.H. ... 95,137,141,179,219,223
GREEN STUFF ... 131
GREG ... 161
GREGGIE ... 137
GREMLIN ... 183,185
GRENIER ... 201
GREW ... 11,123,124
GREY COPPER HILL ... 179
GRIZZLY ... 105,108,109
GRONK ... 111
GROUNDHOG ... 123
GROUSE ... 111
GRUM ... 4,11,141,142,143
GSTD ... 183
GUANO ... 123
GUB ... 106
GUCH ... 223
GUDER ... 201
GULCH ... 223
GULL (105 B) ... 95,101
GULL (105 F) ... 123
GUM BEE ... 91
GUN ... 137
GUNSIGHT ... 105

GUS ... 175
GUSTAVUS ... 151
GUSTY ... 83
Gutrath, G.C ... 226
GUY ... 131
GWAIHIR ... 179
GYP ... 127

H ... 123,125
HACHEY ... 147
Hacienda Oil and Minerals Limited ... 180
HADYN ... 123
HAIL ... 179
Hains, B ... 207
HAL (105 E) ... 121
HAL (105 K) ... 141
HALE ... 223
Halferdahl and Associates Ltd ... 10,15,194
Halferdahl, G ... 195
Halferdahl, L.B ... 194
HALIFAX ... 223
Hall, R ... 148
HAM ... 123
HAMILTON ... 219
HANK ... 147
Hanson Lake ... 181
HARDTACK ... 95
HARIVAL ... 233
HARMAN ... 127
HARNIAK ... 111
HARP ... 10,227
Harris, F.R ... 165,166
Harris, G ... 195
HARRISON ... 175
Hartree, R ... 48
HART RIVER ... 219,221
Hart River ... 15,56,184
Hart River map-area ... 230-231
HARVEY ... 147
HASL ... 207
HASTEN ... 8,164
HATCH ... 197,198
HATTIE ... 223
HAWK ... 131
Hawkins, T.G ... 217
HAWTHORNE ... 215
HAY ... 210
HAYES ... 207
HAYES PEAK ... 105
Hayes Peak ... 108
HAYMEADOW ... 223
HAYSTACK ... 210
HAZEL ... 169
HEALY ... 223
HEART ... 151
HEATHER (95 E) ... 89
HEATHER (106 D) ... 8,180
HEC-TOR ... 210
HECTOR ... 154
HEFFRING ... 210
HEIDI ... 16,231
HEX ... 141
HELEN ... 131
HENCH ... 137
HENDRY ... 183
Hepner, K ... 181
HERPES ... 83,85
HESS ... 163

Hess Mountains ... 14
HG ... 234
HI ... 15,203
HIDDEN (105 B) ... 95
HIDDEN (105 F) ... 123
HIG ... 121
Highland Crow Resources Limited ... 85
HILCHEY ... 210
Hilker, R ... 108
Hills, L.V ... 36
HITCH HIKER ... 131
HL (105 B) ... 95
HL (106 D) ... 179
H.L ... 180
HLAVAY ... 201
HOBO ... 215
HODDER ... 147
Hodson, T.W ... 132
HOEY ... 123
HOGAN ... 151
HOGE ... 193
HOGG ... 123
HOGIE ... 89
HOIDAHL ... 234
Holland, R.T ... 98
HOLLIDAY ... 95
HOLLY (105 K) ... 141
HOLLY (116 B-C) ... 224
Holmgren, L.D ... 116,117
HOME ... 187
HOMESTAKE (105 M) ... 151
HOMESTAKE (115 O) ... 16,212
HOO ... 127
HOOCHEKOO ... 201
HOOLEO ... 123
HOOT ... 121
HOOTALINQUA ... 121
HOPKINS ... 197
Horae, G ... 118
HORN ... 163
HOSE ... 83
HOSER ... 83
HOT (105 B) ... 95
HOT (116 A) ... 219
HOT (116 B-C) ... 223
HOT SPRING ... 151
HOWARD'S PASS ... 135
HOWDEE ... 128
HOWRU ... 123
HUB ... 147,150
Hudgeon Lake ... 21,22
HUDSON ... 127
Hudson Bay Exploration and Development Co. Ltd ... 8
... 10,11,12,14,16,100,102,124,125,128
... 129,135,163,165,166,167,168,197
Hudson Bay Mining and Smelting Co. Ltd ... 113,194
Hudson Bay Oil and Gas Co. Ltd ... 107
HUGH ... 147
Hulstein, N ... 98,149
HUMP ... 193
Humphreys, N ... 165
HUNDERE ... 91
HUNG ... 210
HUNGRY ... 223
HUNK ... 210
Hunker Creek ... 17
HUNKER DOME ... 210,211
HUSKY ... 46,156,189

Hutcheon, I.F ... 233
Hureau, A ... 112
Hyde, W ... 96
HYLAND ... 91
Hyland River ... 73
Hylands, J.J ... 98

I ... 95
ICE (105 B) ... 95
ICE (105 O) ... 13,163,164
ICEFIELD ... 193
ICHIE ... 112
ID ... 223
IDA ... 219
IDAHO ... 95,101
IGLE ... 123
IGOR ... 15,183,184
Ikona, C.K ... 175
ILLIA ... 112
ILLUSION ... 121
IMP ... 111
INCA ... 163
INCO ... 111
Inco Limited ... 156,216,217
INDEX ... 223
INDIAN ... 210
Indian River ... 35,36
Individual Mines ... 156
INGRAM ... 111
INGS ... 127
IOLA ... 123,124
Iola Mines Ltd ... 124
Iona Industries Inc ... 14
IOTA ... 15,176
IRENE (105 G) ... 128
IRENE (106 E) ... 183
IRMA ... 141
IRONCLAD ... 151
IRON CREEK ... 105
IRVINE ... 95
Irvine Creek ... 98
ISABEL ... 151,158
ISABELLE ... 226
ISO #1 and #2 ... 89
Iso Mines Ltd ... 89
ITSI ... 137
IVAN ... 141
IVO ... 89

J ... 118
JA ... 10
JABBERWOCK ... 215
JACK ... 8,180
JACKALOO ... 105,106,109
JACKPOT ... 189
JACKSON ... 111
JACOLA ... 141
JACQUOT ... 193
Jago, B ... 226,229,234
JAKE ... 127
Jalna Resources ... 150
JAM ... 175
James, D.H ... 133,165,166,167
JAN (105 H) ... 10,131
JAN (115 G) ... 195
JANE ... 231
JANISIW ... 197
JAR (105 B) ... 13,98,101
JAR (105 L) ... 147,149
JARVIS ... 191
JASON ... 8,163,164,168
JAVA ... 111
JAYBEE ... 215
JAZ ... 179
J.C ... 4,95,97
JD ... 123
JDX ... 123
JEAN (95 D) ... 83
JEAN (105 D) ... 111
JEANETTE ... 183
JECKELL ... 223
JEE ... 179
JEFF (105 O) ... 163
JEFF (106 D) ... 180
Jenkins, T ... 169
Jennings, D.S ... 144
JEPHSON ... 223
JERI ... 83
JEROME ... 223
JILL ... 109
Jilson, G.A ... 132
J.K ... 163,168
JO ... 15,195
JOCK ... 154
JOE (105 G) ... 127
JOE (105 K) ... 141
JOE (116 C) ... 224
JOE "1" ... 224,227
JOE PETTY ... 112
Johnson, L ... 150
JOHOBO ... 189
JOLLY ... 175,176
JONI ... 12,83
JOSE ... 89
JOSEPHINE ... 215,216
JOUMBIRA ... 151,156
JOVE ... 210
JOY ... 161
JP ... 234
JT (95 D) ... 83,84
J.T. (106 D) ... 179,181
JUBILEE ... 14,111,118
JUBJUB ... 215
JULIA ... 131
JUMPONT ... 147
JUNE ... 158
Jury, R ... 212
JY ... 194,195

KAL ... 8,11,148
Kalzas Mountain ... 12,150
KAM ... 169
KANE ... 189
KANGAROO ... 141,145
Kapusta, J.D ... 168
KASKAWULSH ... 191
KAT ... 10,195
KATHLEEN ... 179
KATHY ... 179
KAY ... 123
KD ... 141
KEELE ... 163
KEGLOVIC ... 141
KEL ... 189
KELI ... 83
KELLY ... 147
Kemp, J ... 204

KEN (105 O)........ 163
KEN (106 F)........ 187
KENNEDY........ 194
KENO........ 6,156
Keno Hill........ 8,14,157
Kenton Natural Resources Corporation........ 234
KEPT........ 229
KERNS........ 95
KERR........ 201
Kerr Addison Mines Ltd........ 10,12,91,92,149
Kerrich, R........ 76
KET........ 123
KETZA RIVER........ 123
Ketza River........ 14
KEY MOUNTAIN........ 175
KEYSTONE........ 223
KEY 18........ 14
KEY 3........ 14,123
KID........ 10,189
KIDD........ 161
Kidd Creek Mines Limited........ 10,11,12,16,81
KIDNEY........ 175
Kikuchi, T........ 207
KIM........ 141
KIMBERLEY........ 191
Kimberley Gold Resources Inc........ 132
KIMI........ 223
Kinai Resources Corp........ 131
Kindle, E.D........ 189
KING (105 H)........ 133
KING (105 K)........ 143
KING ARCTIC........ 131
KING LAKE........ 111
KING SOLOMON........ 211
King Solomon Dome........ 211
KINK........ 128,129
KIRK........ 197
KISS........ 179
KITCHEN........ 105
KITL........ 223
KIWI........ 223
Klaver, V........ 3
KLAZAN........ 201,202
KLETSAN........ 194
Klondike Lode Gold Mines Ltd........ 211
Klondike Silver Mines........ 15
KLOO........ 189
KLOT........ 207
Klotassin River........ 34,38
Kluane Lake........ 15
Kluane map-area........ 192-195
KLUKSHU........ 189
KLUNK........ 91
KNEIL........ 131,132
KNOB HILL........ 111
Knob Hill........ 226
KOHSE........ 175
KOIDERN........ 194
KODIAK........ 95,100
KOMISH........ 89
KON........ 123
KOOK........ 201
KOPINEC........ 123
Korenic, J.A........ 116
Koser, R........ 150
Kowalchuk, J.M........ 96
KPO........ 154
KRAUSE........ 223
Kreft, E........ 114,118
KUBIAK........ 95
Kuehnbaum, R.M........ 198
KUKU........ 13,112,116,118
KULAN........ 141
KUSAWA........ 189
KZ........ 8,229

L........ 96
LABE........ 111
LABELLE........ 89
LABERGE........ 121
Laberge map-area........ 120-121
La Biche River........ 12
La Biche River map-area........ 80-81
LAD........ 141
LADUE........ 210
Ladue River........ 34
LADUE FRACTION........ 151
LADY DI........ 11,141,145
Lafleur, J........ 48
LAFORMA........ 201
Lajoie, J.J........ 132
LAKE (105 B)........ 101
LAKE (105 D)........ 112,118
Lake Laberge........ 2,63
Lakeview Mountain........ 117
LAN........ 131
Lansing map-area........ 160-161
LAMB........ 217
LAP........ 123
LAP 10........ 123
LAPIE........ 123
LARRY........ 194
Larsen Creek map-area........ 218-221
Larson, A........ 204
LAST (95 D)........ 83
LAST (105 F)........ 123
LATREILLE........ 111
LAURA........ 187
Laurier Creek........ 63
LAVALEE........ 111
LAWRENCE........ 223
LAYSIER........ 151
LEACH........ 128,129
LEAH........ 175
LEARY........ 175
LEE........ 131
Lee, G.C........ 107
LEEN........ 179
LEETEE........ 151
LEDUC........ 223
LEGAL TENDER........ 111
Legare, J........ 101
LENA........ 95
LEOTTA........ 210
LEP (115 F-G)........ 193
LEP (116 A)........ 219
LEPINE........ 223
LESLIE........ 207
LETA........ 201
LEWES RIVER........ 111
LEWIS........ 215,216
Lewis, B........ 3
LFV........ 175
LH........ 137
Liard River........ 91
LIBERTY........ 193

LICK 95
LIL (115 I) 201
LIL (115 N-O) 210
LILYPAD 210
LIME 14,201
Lime Peak 111
Limion, H 2,63,65-67
LIN 107
LINCOLN 234
LIND 105
LINDA 131,133
Lindex Exploration Limited 145
LINDSAY 211
LING 105
LINGHAM 91
LION 179
LISA 197
Little Chief 105
LITTLE MOOSE 4,113
Little Mountain 95
LITTLE SALMON 74
LJB 147
LLOD 215,217
LLOYD 233
Loam Silver Mines 210
LOBO (95 D) 96,100
LOBO (105 L) 83,86
LODE 147
LOG (105 B) 210,212
LOG (106 C) 97
LOGAN 175
Logan Mines Ltd 11,95,98
LOGJAM 14
LOGTUNG 14,95,97,101
LOKKEN 4,95
LOKO 147
LOLA 141
LOLO 96
LOMOND CREEK 141
LONE STAR 219
Lone Star Ltd 210,211
Lone Star Ridge 211
LONELY 211
LOON 201
LOOTZ 121
LOPSTICK 12,83,84
LORD 183
LORI (105 B) 95
LORI (105 E) 101
LORNA 121
LORNE (105 D) 141
LORNE (105 F) 111
LOSCH 123
LOST 197
LOST WERNECKE COPPER 95
LOU 151
LOUIE 141
Lovett Gulch 179
Lowey, G.W 17
Lowey, J.F 2,34
LOWNEY 34
LU 223
LUBRA 141
LUCK 210
LUCKY STRIKE 95
LUGDUSH 179
LULU 215,216
LUSCAR 111

LWR 111
LYDIA 183,184,185
LYN 95,101
Lynch, G.V 141
LYNX (105 H) 2,32,38
LYNX (106 D) 131
179

M 118,194
MAC (105 B) 95,101
MAC (105 O) 8,163,165
MAC (106 C) 175
MAC (115 I) 201
MACARTHUR 147,148
Macdonald, G 114
MACK'S 197
MACLEAN 223
MacLeod, G 114
Macmillan Pass 116
MACTUNG 4,163
MAD 135
MAGIC 183
MAGUNDY 123
Maheux, G 118
MAHTIN 215
MAIDEN 223
Main, C.A 85,89
MAISY 210
MALONEY 201
MAM 234
MAMMOTH 175
Manson, W.O 114
MAP 127
MAPEL 131
MAR 10,12,95,101,180
MARBEE 121
MARG 8,179,180,181
MARGUERITE 207
MARIO 226
MARION 89
MARK 91
MARLIN 105
MARN 15,223,225
MARS 10,12,81
MARSH 111,114
MARSHALL 175
Marsh Lake 14
Martel B 101
MARTET 183
MARTIN 91
Martin House map-area 232,233
MARY 215,216
MASTADON 223
MASTIFF 154
MATCH 198
Matson Creek 34
Mattagami Lake Exploration 8,15,16
MATT BERRY 131
MATTSON 219
MAUD 201
MAX 131
MAXI 131
MAY (105 H) 131
MAY (105 K) 141
May Creek 121
MAY CREEK 215
MAYBE 121
MAYBRUN 151
Mayo map-area 151,158

McCABE........ 201
McCann, A.M........ 124
McCASH........ 123
McCLEERY........ 105,106,109
McClintock Lakes........ 117
McCLUSKY........ 179
McCOWAN........ 147
McCrory Holdings........ 96
McFaull, J........ 203
McKAY HILL........ 179
McKELVIE........ 175
McKIM........ 151
McKINNON........ 210
McLaren, G........ 157
McLELLAN........ 193
M'CLINTOCK........ 111
McMICHAEL........ 210
McMILLAN........ 83,84
McMillan, K........ 73
McNEE........ 123
McNEIL........ 127
McQuesten map-area........ 214-217
McQuesten River........ 2,26,27
MEHITABEL........ 171
MEI........ 10,95,101
MEILECKE........ 179
MEISTER........ 11,95
Meister Lake........ 98
MEL........ 12,83,84
MELA........ 15,220
MEL-EAST........ 83,84
MEL-HOSER........ 83
MEMOIR........ 193
MERRICE........ 201
Metallgesellschaft Canada Ltd........ 144
METALLINE........ 193
MEXICO........ 193
MF........ 114
MICH........ 105
MICHELLE........ 219
MICHIE........ 111
MICKEY........ 223
MICKEY CREEK........ 223
MID (105 B)........ 96,98
MID (106 C)........ 175
MIDAS........ 131
MIDGETT........ 111
MIDNIGHT........ 95,96
MIDNIGHT DOME........ 223
MIDWAY........ 11,95,96
MIKE........ 164,219
Mike Hill........ 234
MIKO........ 131
MILCH........ 229
Milchem Canada Ltd........ 220
MILK UM........ 219,220,221
MILLER........ 223
Miller Creek........ 226
Miller, D.C........ 83
MILLET........ 111
MILLHAVEN........ 111
MILL HOUSE........ 189
MINDY........ 10,105,107,109
Mine Creek........ 73
MING........ 141
MINK........ 112,118
MINNESOTA........ 201
MINTO........ 201
Minto Lake........ 27
Misty Creek........ 16
MITCHELL........ 210,211
Mitchell Syndicate........ 211
Mitex Mining........ 164
MJM........ 91
MK........ 207
ML........ 197
MM (105 F)........ 123
MM (105 G)........ 127
MMM........ 123
M&M........ 112
MN........ 141,143,144
MO........ 151
MOBS........ 123
MOGUL........ 175
MOLE........ 180
MOLY........ 124
MOLLY (105 A)........ 91
MOLLY (105 F)........ 123
MOKO........ 233
MONEY........ 128
MONSTER........ 223
MONT........ 127
MONTANA........ 111
MONTE CHRISTO........ 210
MONTSE........ 131
MONY........ 223
MOON........ 151,203
MOONLIGHT........ 163
Moore, J.M., (Jr.)........ 55
MOOSE (105 B)........ 95
MOOSE (105 O)........ 163
MOOSE (116 K)........ 234
MOOSE CHANNEL........ 234
MOOSE HILL........ 105
MOOSEHORN........ 210
MOOSELICK........ 95
MOOSE RIDGE........ 215
MORAINE........ 197
Morin, J.A........ 2,3,4,32,48,71
Morison, S........ 2,3,50
MORNING........ 111,116
MORRISON........ 223
Morrison, L........ 227
MOULE........ 147
Mount Byng........ 14,114,117
Mountaineer Mines Limited........ 8,180
Mt. ALBERT........ 151
Mt. ANDERSON........ 111
Mt. BRONSON........ 210
Mt. BUSH........ 111
Mt. COOK........ 11,123,124
Mt. GRANT........ 105
Mt. HALDANE........ 27,151
Mt. Harper........ 2,55-61
Mt. HART........ 34,210
Mt. HINTON........ 151
Mt. Hundere........ 14
Mt. MISERY........ 123
Mt. NANSEN........ 68,201
Mount Menzie........ 145
Mt. REID........ 111
Mt. ROSS........ 123
Mt. St. Elias map-area........ 190-191
Mt. SHELDON........ 137
Mt. Skukum........ 2,4,13,68,70,71
Mt. STEVENS........ 111

Mt. WHEATON.... 111
MOUSE.... 175
MOX.... 123
MOZI.... 215
MR.... 11,95,98,99
MS.... 137
MST.... 183
MT.... 158
MTB.... 131
MTR.... 183
MUD.... 111
MUELLER.... 175
MUIR.... 147
MULLER.... 193
Muller, J.E.... 193
Mulligan, R.... 105
Mullin, A.... 207
MULTI.... 141
MULTIPLY.... 223
MUMBO.... 83
MUMS.... 123
MUN.... 4,13,95,96
MUNG.... 95
MUNROE.... 111
MUNSON.... 95
MUR.... 141
Murchy, B.... 36
MURPHY.... 123
MURRAY.... 91
Murray, J.S.... 224,225,226
Murray, S.... 18
Murrell, M.R.... 164
MUSH.... 189
MUSKATEER.... 193
MUSTARD.... 121
MUT.... 201
MV.... 163
MW.... 95
MYDA.... 127

NABOB #2.... 151
NADA.... 201
NADALEEN.... 175
Nadaleen River map-area.... 174-176
Nagy, L.G.... 97,112,217
Nahanni map-area.... 134-135
NAIAD.... 14,112,116
NAN.... 195
NANCY.... 179,181
NAR.... 135
NARCHILLA.... 131
NARNIA.... 14,194
Nash Creek map-area.... 178-181
NASTY.... 141
NAT.... 179
NATE.... 234
NAVAJO.... 201
NAZO.... 91
NC.... 121
NCC.... 123
ND.... 211
NEBULOUS.... 223
NECO.... 173
NEEDLE ROCK.... 201
Neelands, J.T.... 108,115,117,118,121
NEF.... 207
NERO.... 151
NESBITT.... 141
NESS.... 135
NEST.... 175
NET.... 234
NEVE.... 14,163,164
NEW.... 128
NEW BONANZA.... 211
New Imperial Mines Ltd.... 113
NEW JERSEY.... 179
Newmont Exploration of Canada Ltd.... 10,107,109
NEWRY.... 151
NEWT.... 179,201
NIC.... 215,217
NICK.... 194
NIDD.... 8,163,164
Niddery Lake.... 16,166
Niddery Lake map-area.... 162-169
NIGHT.... 96
NIOBE FRACTION.... 211
NIP.... 111
Nisling River.... 38
NIT.... 201
NITE.... 95
NITRO.... 14,202
NMT.... 128
NO BEAVER.... 220
NO CASH.... 6,156
NOD.... 135
NOKLUIT.... 123
NOLE.... 127
NOM.... 135
NOON.... 15,203,204
NOR.... 233
Noranda Exploration Co. Ltd. 2,10,11,13,87,145,161,189
.... 217,220,225,226,227,229,231,234
NORD.... 151
NORDEX.... 207
NORK.... 141
NORKEN.... 137
NORRIS.... 233
Norris, D.K.... 183,187,229,231,233,234
NORTHAIR.... 201
Northern Cordillera Mineral Inventory.... 79
NORTHERN LIGHTS.... 210
North Hart Resources Ltd.... 221
North Star.... 4,15,113
North Stewart River Joint Venture.... 216
NOT.... 123
NOTT.... 91
NOW.... 179
NOWA.... 89
NUCLEAR.... 229
NUCLEUS.... 14,201,202
Nugget Drilling.... 16
NUT.... 163,169
NUTZOTIN.... 207
NW.... 105,107

OAKE.... 95
O'BRIEN.... 223,227
O'Brien, J.... 63
OBVIOUS.... 123,125
O'CONNOR.... 141
OO.... 223
ODD (105 D).... 112,115
ODD (105 O).... 163
OG.... 223
OGILVIE.... 223
Ogilvie Joint Venture.... 8,164

Ogilvie Mineral Corp. 164
Ogilvie Map-area 228-229
Ogilvie Mountains 2,8,15,35,55,61
Ogilvie River 16
OHNO 135
OJ 112
OLD 165
OLD CABIN 14,163,165,169
Old Cabin Creek 14
Old Crow map-area 232-233
Olfert, E.G 220
OLD GOLD 95
OLGIE 141
OLIVER CREEK 26
OLLIE 112,118
OMEGA 10,215,217
OMO 135
ON 131
ONCE 183
ONE HUMP 147,149,150
O'Neill, T.G 220
ONION 207
OPHIE 212
Ophir Creek 212
Ophir Mining Syndicate 212
OPULENCE 111
OPERATION 123
ORE 151,158
Orekon Ltd. 211
Orekon/Lindex Exp. Ltd. 211
ORI 201
ORION 183
ORK 15,105,107,109
ORLOFF 197
Orma Hill 234
ORO (105 I) 135
ORO (115 N-O) 210
Orssich, C 180
OSCAR 91
OTH 10,95,101
OTIS 183
OTT 83
OTTER 175
OUDDER 83,85
OULETTE 95,101
Overland Exploration Ltd. 143
OVOAS 121
OWL (105 E) 10,121
OWL (105 K) 141
OXO 123
OXY 123
OZ 223,227

Pacific Ridge Resources, Corp 217
PACK 127
PACKERS 131
PADDY 151
PAGISTEEL 179
PAL 201
Pamicon Developments Ltd. 96
PAN 215
Pan Ocean Oil Ltd. 8
PANTHER 201
Panther Mines Ltd. 14
Paradise Hill 17
PARENT 151
PARK 10,95,101
PART 111
PARTRIDGE 95
PAT (105 A) 91
PAT (105 G) 128
PAT (115 J-K) 207
PAT (105 M) 12, 157
PATCH 198
Paterson, I.A 148,225
PATRICIA 131
PATTISON 207
PAUL 179
PAULA 223
Paul, B 156,216
PAY 127
Payne, C.W 143,145,148
PDM 137
PEACH 233
PEACOCK 212
PEAK 123
PEBBLE 161
Peel, G 118
PEGASEUS 91
PELLY 147,201
Pelly Mountains 14,18,23
Pelly River 11
PEN 141
PER 210
PESO 179
PET 226
PETE (105 O) 163
PETE (106 L) 233
PETER 147,169
Peter Kiss Oil Field Construction Ltd. 16
Pezzot, E.T 98
PHELPS 201
PHIL 127
PHILP 219
PHOTO 189
PICK 127
PICKERING 210
PICKHANDLE 193
PIG 137
PIK 179
PIKE 15,137,180
PILON 233
PIM 123
PIMA 151
PINE 224,227
PINESOL 95
PING 175
PISA 123
PIT 127
PITCH 179
PITTS 201
PL 229
Placer Developments Ltd. 11,135
Placer Gold 17,34,50
PLAINS 187
PLATA 161
PLAY 83,87
PLEASANT 161
PLUG (105 B) 95
PLUG (115 B-C) 191
PLUMB 127
PLUTO 223,225
PM 123
POG 95
POLAR 111
POLARIS 183

POMPEI ... 111
POND ... 96,100
PONT ... 95
PONT B ... 95
PONY ... 123
POO ... 175
POOK ... 118
POOL ... 81
Poole, W.H ... 95
POOLY ... 112,118
POON ... 16,201,203,204
PORCUPINE ... 6,95,156
Porcupine Pit ... 18,19,21,22,224
Porcupine River map-area ... 232-234
PORKER ... 83,84,87
PORPHYRY ... 175
PORTER ... 111
PORTLAND ... 210
POTATO HILLS ... 179
Potter, A ... 86
Poulin, B ... 101
POW ... 111
PPR ... 137
PR ... 173
PRIDE ... 207
Pride, C ... 2,38,48
PRIMROSE ... 111,112,118
Primrose Lake ... 13,115
PRINCESS ... 131
Prism Resources ... 14
PRO ... 157
Procan Exploration ... 11,97
PROFEIT ... 175
PRONGS ... 183
PROSE ... 111,112,114
PROSPECT ... 210
Prospectors Airways Ltd ... 148
Prospector Mountain ... 4
PROVOST ... 137
PTARMIGAN ... 111
PTERD ... 175
PUB ... 223
PUKELMAN ... 215,216
PUP ... 127
Pure Silver ... 14
PY ... 127
Pyrite Creek ... 73
PYROXENE ... 210

QUANDARY ... 127
Quartz Creek ... 73
Quartz Lake ... 2,73-77
Queenstake Resources Ltd ... 180
Queen's University ... 89,133
Quiet Lake map-area ... 122-125
QUILL ... 193
QUINALTA ... 111
Quintara Minerals Corp. Ltd ... 194
QUIVER ... 10,12,84,87
QUO ... 12,83,86

RAB ... 10,11,128,129
RABBIT (105 L) ... 8,147,149
RABBIT (115 F-G) ... 193
RACHEL ... 141,143,144
RACICOT ... 163
RAD ... 179
RAFE ... 175,181
RAFT ... 194
RAGS (105 J) ... 137,139
RAGS (105 K) ... 141
RAIL ... 13,223,225,227
RAILROAD ... 14,111
RAIN ... 131,207,216
Rainbird, R.H ... 216
RAINBOW (105 B) ... 95
RAINBOW (115 I) ... 201
RALPHO ... 83
RAM (105 D) ... 13,111,114,115
RAM (105 F) ... 123
RAM (105 N) ... 161
RAM (106 C) ... 175
RAMA ... 219
RAMBLER ... 179
RAMING ... 111
RANKL ... 121
RAPI ... 183
RAPID ... 234
RAS ... 233
RAVEN (105 D) ... 112,118
RAVEN (115 N-O) ... 210
RAY ... 91,101
RAY GULCH ... 179
Ray Gulch ... 4,12
RAZ ... 141
R.B ... 139
R.D ... 180
REA ... 131
Read, W.S ... 144
READFORD ... 210
REBEL ... 141
RED ... 101
RED FOX ... 201
RED MOUNTAIN ... 105,106
Red Mountain ... 4,13,107,108
Regional Resources Ltd ... 4,11,97,98
Reid, P ... 2,63
REIN ... 223
REINDEER ... 219
REN ... 121
RENO ... 11,128
REP ... 175
RESERVE ... 141
REVENUE ... 201
REX (106 D) ... 179
REX (115 A) ... 189
RG ... 223
R.H ... 107
Rhodes, D.R ... 164
RHYOLITE ... 194
RHOSGOBEL ... 215,216
RIBA ... 105
Richardson Mountains ... 15
RIDDELL ... 137
RIDGE (105 K) ... 141
RIDGE (115 P) ... 215
Ridgeway, S ... 101
RIKI ... 223
RILEY ... 127
RIMROCK ... 219
RIN ... 183
RINGO ... 101
RINK ... 201
RIO (95 E) ... 89
RIO (116 K) ... 234
RIP ... 207

RIS.............................. 127
RISBY.............................. 123,124
RISCO.............................. 223
RITCO.............................. 91
RITZ.............................. 135
RIVIERA.............................. 127
RJ (115 K).............................. 207
RJ (115 O).............................. 211
ROAD (105 B).............................. 13,96
ROAD (105 H).............................. 131
ROAD (116 C).............................. 225
ROAD RIVER.............................. 85
ROAL.............................. 223
ROB (105 G).............................. 127
ROB (116 B-C).............................. 223
ROBERT SERVICE.............................. 223
Roberts, D.............................. 32
Robertson, R.............................. 163
ROC.............................. 201
ROCK RIVER COAL..............................16,83,86
ROCKSLIDE.............................. 194
ROCKY.............................. 123
ROD.............................. 179
Roddick, J.A.............................. 89,95,137,141
ROG.............................. 137,150
Rogers, R.............................. 144,225
Rogue Range.............................. 14
Rogue River.............................. 168
RON (105 H).............................. 131
RON (115 N-O).............................. 210
ROOK.............................. 135
ROOP.............................. 151
Roots, C.............................. 2,32,55
ROSA 224
ROSE (95 E).............................. 89
ROSE (105 D).............................. 111,112,114,118
ROSE (105 H).............................. 133
ROSE (116 B-C).............................. 223
ROSEBUD.............................. 215
Rosequist, M.............................. 133
ROSS (105 I).............................. 135
ROSS (105 M).............................. 151
ROSS (105 O).............................. 14,163,168
ROSS RIDGE.............................. 141
ROSY.............................. 105
Rota, D.............................. 32,156,216,217
Rowe, J.D.............................. 98
ROYAL.............................. 179
RPP.............................. 123
RSVP.............................. 147
RUBY..............................4,6,154,156,210
RUDE CREEK.............................. 207
RUDY.............................. 137,139
RUM.............................. 175
RUNER.............................. 151
RUSH.............................. 12,81
RUSK.............................. 201
RUSTY.............................. 179
Rusty Mountains.............................. 14
RUSTY SPRINGS.............................. 15,233,234
RUTH.............................. 141,212
Ryback-Hardy, V.............................. 96
Ryder, D.L.............................. 118

SAB.............................. 10,95,101
SADIE LADUE.............................. 154
ST. BRIDGET.............................. 219,220
ST. ELIAS.............................. 193
SAINVILLE.............................. 183
SAL.............................. 123
SALEKEN.............................. 233
SALMON.............................. 148,149
Salmon, K.............................. 3,32
SALUTATION.............................. 175
SAM (105 F).............................. 13,124,125
SAM (106 D).............................. 179
SAM (115 I).............................. 201
Samovar.............................. 4
Sanguinetti, M.H.............................. 98
SANDERS.............................. 127
SANDOW.............................. 223
SANPETE.............................. 193
SANTA.............................. 210
SAP.............................. 147
SAS.............................. 128
Saskatchewan Mining and Development Corp.......... 138
SATO.............................. 197
SAVOYA RESOURCES CORP.............................. 10,121
SAVY.............................. 215
SAWMILL.............................. 91
SAYEH.............................. 105,108
SBS.............................. 121
SCHEELITE DOME.............................. 27
Schellenberg, D.............................. 101
SCOT.............................. 10,163
Scott, A.R.............................. 144,148,149,150
Scott, P.M.............................. 164
Scott, T.C.............................. 96
SCROGGIE.............................. 207
SCYLLA.............................. 183
SEA (105 B).............................. 10,95,101
SEA (105 K).............................. 141
SEAFORTH.............................. 105
SEARFOSS.............................. 147
SEATTLE.............................. 215
SEATU.............................. 123
SECRET CREEK.............................. 215
SEELA.............................. 223
SEGSWORTH.............................. 151
SEK.............................. 197
SEKULMUN.............................. 197
Sekwi Mountain map-area.............................. 16,170-171
SEL.............................. 135
SELKIRK.............................. 201
SELWYN.............................. 207
Selwyn Basin.............................. 221
SEMENOF.............................. 121
SER.............................. 179
Seraphim, R.H.............................. 84,85
R.H. Seraphim Engineering Ltd.............................. 84,85,86
SEREM Limited.............................. 10,12,13,16,84,86,100,169
SETHER.............................. 215
SETTLEMEIR.............................. 179
SEVENSMA.............................. 193
SHAD.............................. 197
SHAFT.............................. 189
SHALE.............................. 11,128,129
SHAND.............................. 223
SHANNON.............................. 141
SHARE.............................. 194
SHARON (105 F).............................. 123
SHARON (106 D).............................. 179
SHARPE.............................. 193
SHANGHAI.............................. 151
SHAW.............................. 111
Shaw, D.............................. 105

SHAY.... 219
SHEBA.... 211
Sheba Dome.... 211
SHEEP.... 112,191
SHEELITE DOME.... 215
Sheldon Lake map-area.... 136-139
SHELL CREEK.... 223
SHEPPARD.... 179
SHERPA.... 137
SHIELD.... 135
SHILSKY.... 95
SHINGIE.... 234
SHORTY.... 189
SHRIMP.... 141
SIAN.... 175
SIDE.... 197
SIDESLIP.... 151
SIDNEY.... 105
SIFTON.... 189
SIHOTA.... 179
SILVER.... 132
SILVER BASIN.... 151
SILVER CITY.... 223
SILVER DUKE.... 158
SILVER HILL.... 179
Silver Springs Mines Ltd.... 180
Silver Tusk Mines Ltd.... 14
SIM.... 13,163,166
SIME & BERMINGHAM.... 156
SIN (95 D).... 83
SIN (105 B).... 95
SINISTER.... 151,158
SIR JOHN A..... 141
SIROLA.... 141
SIT DOWN.... 229
Sixtymile River.... 2,34,35,36
Skagway Moly Inc.... 124,207
SKATE.... 179
SKIN.... 95
SKIP.... 226
SKUKUM.... 111,116
Skukum Creek.... 69
SKULL.... 132
SLAB.... 179
SLAM.... 127
SLATE.... 105
Slate Creek.... 25
SLATER.... 183
SLATS.... 179
SLEWE.... 112
SLINE.... 121
SLOUCE.... 95
SLUGGO.... 216
SM.... 105,106
Smalley, C.... 195
SMD Mining Co. Ltd.... 15,139
SMEG.... 105
Smillie, P.... 3
Smith, M.J.... 2,68
SMOKEY.... 163,169,180
Snag map-area.... 206-207
SNAKE.... 175
Snake River map-area.... 186-187
SNARK.... 216
SNATCH.... 215
SNEET.... 89
SNERD.... 123
SNIP.... 210
SNIPE.... 197
SNOWDRIFT.... 4,154
Snowshoe Pit.... 8,19,23
SNOWSTAR.... 179
SNYDER.... 223
SOCK.... 141,145
SOLO.... 141
Solomon Dome.... 211
SOMME.... 207
SON.... 210
SONNY.... 123
SOUP.... 219
SOURCE.... 13,95,100
SOURDOUGH MINE.... 223
SOUTHER.... 189
SOUTH TANTALUS.... 201
SOV.... 83
SP.... 215,217
SPE.... 10
SPEARHEAD.... 137
SPEC.... 224,227
SPEC-2.... 224,227
SPECTROAIR.... 175
SPHERE.... 223,224
Sphere Development Corp. Ltd.... 226
SPIKE.... 10,225,227
SPIS.... 161
SPORK.... 83
SPOTTED FAWN.... 223
SPRAGUE.... 215
SPRING (106 D).... 179
SPRUCE.... 10,16,83,86
SPUD.... 127,216
SPUR.... 141
SQUANGA.... 105
Squaw Creek.... 50
SS.... 10,158
Stallabrass, I.... 3
Stammers, M.A.... 84,100
STAND TO.... 179
STANDARD.... 163
STAR (95 D).... 83
STAR (106 C).... 175
STARBIRD.... 201
STARR.... 128
STARTIP.... 105
STEELE.... 131
Stephen, J.C.... 97,106,107,108
J.C. Stephen Explorations Ltd.... 10,13,15,96,97
.... 98,101,106,107,109
STERLING.... 95
STEVENSON.... 207
Stevenson, W.G.... 211
STEVO.... 210
Stewart River map-area.... 208-212
STONEAXE.... 95
STONEMARTEN.... 83
STORMY.... 123
STOVE.... 193
STQ.... 95
STRADDLE.... 234
Strain, D.M.... 118,121
Stratham, R.... 101
STREBCHUCK.... 151,156
STRIDE.... 189
STRIP.... 175
STROKER.... 219
Strosheim, R.... 128,165

STU (105 H).......... 131
STU (115 I).......... 15,201,202,203,204
Stubenberg.......... 81
STUMP.......... 123
STYX.......... 223
SUBMARINE.......... 223
SUBTRACT.......... 223
SUDGEN.......... 189
SUE.......... 10,11,147,148,150,195
SUITS.......... 111
Sulpetro Minerals Ltd.......... 12,16,83,86
SUMI.......... 219
SUMTING.......... 223
SUN (105 F).......... 123
SUN (105 O).......... 8,13,163,166
SUN (106 C).......... 175
SUN (115 I).......... 201
SUN (115 P).......... 215
SUNAGHUN.......... 233
SUNDOWN.......... 151
SUNSET.......... 89
SURETHING.......... 15,106
SUSAN.......... 131
SUSTAK.......... 210
SUZANNE.......... 131
SVENN.......... 210
SWASTIKA.......... 211
SWEDE (115 J-K).......... 207
SWEDE (116 B-C).......... 224
SWIFT.......... 95
SWIFT BANANAS.......... 151
SWIM.......... 4,141,143
SYLVIA.......... 121

TAC.......... 137
TACK.......... 233
TAD.......... 201
TAI.......... 131
TAK.......... 16,223,226
TAKHINI.......... 121
TAKU (105 F).......... 123
TAKU (105 K).......... 141
TALBOT.......... 194
TALLY-HO.......... 111
TANG.......... 135
TANTULUS BUTTE.......... 201
TANTALUS MINE.......... 201
TANYA.......... 131
TAPIN.......... 175
TAR.......... 141,183
TARA.......... 175
TARFU.......... 105
TART.......... 223
TARTZHART.......... 224
TATER..........10,15,16,224,227
TAWA.......... 10,203
Tay River map-area.......... 8,16,140-145
TAYLOR.......... 193
Taylor, D.P.......... 219
TEA.......... 4
TEAM.......... 95
Teck Corporation.......... 16
TED.......... 131
TEDDY.......... 141
TEE.......... 216
TEL.......... 141
TELLURIDE.......... 191
Tempelman-Kluit, D.J.... 18,67,121,123,127,137,141,197
.... 201,207
TENAS.......... 11,141
TENMILE.......... 210
Tenmile Creek.......... 34
TER.......... 141
TERMUENDE.......... 233,234
Territorial Gold Placers.......... 16,226,227
TERRY.......... 131
TES.......... 14,121
Teslin Joint Venture.......... 224,225,226
Teslin Lake.......... 108
Teslin map-area.......... 104-109
Teslin Mountain.......... 14
TETA.......... 223
TETRAHEDRITE CREEK.......... 175,176
Texaco Resources Canada Ltd.......... 15,176
THANE.......... 223
THATCH.......... 198
THIS.......... 210
THISTLE.......... 111,211
THOMAS.......... 141
THOR (95 C).......... 81
THOR (105 H).......... 131
THOR (116 B-C).......... 223
THORIUM.......... 183
Thornburg Mining Co.......... 211
THRALL.......... 95,99
3 2 MANY.......... 207
TIE.......... 225
TIER.......... 123
TIKA.......... 112
TIL.......... 128
TILL.......... 91
TILLEI.......... 131
TIM (105 F).......... 123
TIM (105 H).......... 131
TIM (116 A).......... 219
TIMBERWOLF.......... 219
Timmons, W.G.......... 180
TIN (105 H).......... 131
TIN (116 F-G).......... 229
TINCUP.......... 194
TING (95 C).......... 81
TING (116 B-C).......... 223
TINTA.......... 201
TINTA HILL.......... 201
Tinta Hill.......... 14
TINTINA.......... 127
Tintina Mines Ltd.......... 4,13,106
Tintina Trench.......... 35
TINY.......... 131
TIPY.......... 112
TIZA.......... 224,226
TJOP.......... 223,224
TOO.......... 10,13,95,100,102
TOKE.......... 127
TOM (105 B).......... 10,101
TOM (105 F).......... 123
TOM (105 O).......... 8,163,165
TOMI.......... 83
TOMMY.......... 91
TONGUE.......... 161
TONI TIGER.......... 207
TONY.......... 14
Toohey, J.......... 133
TOOT.......... 16,95,201,203,204
TOOTS.......... 123

TOP (105 D)........ 111
TOP (105 G)........ 127
TOPAZIOS........ 111
TOPOROWSKI........ 175
TORRANCE........ 210
TOSH........ 197
TOTH........ 215
TOUCHE........ 15,233,234
TOW........ 175
TOWER PEAK........ 123
TOWHATA........ 201
TOWNSITE........ 154
TOY........ 131
TRACK........ 225
TRAFFIC........ 137
Trail River map-area........ 232-234
TRANZ........ 12,81
TREDGER........ 147
TREE........ 123
TREMAR........ 111
TRENCH........ 123
TREVA........ 210
TRILBY........ 210
TROLL........ 112
TROPICAL........ 81
TROUT........ 95
TROY........ 95
TRUDI........ 207
TRUITT........ 147
TRYALA........ 163,169
TSS........ 141
TUB........ 123
TUCHITUA........ 131
TUDL 8,10,180,181
TUF (105 M)........ 151
TUF (115 I)........ 201
TUKU........ 183
Tully, D.W........ 131,132
TUM........ 147
TUMMEL........ 147
TUNA........ 131,133
TUNG........ 95
TURK........10,15,224-227
TUSTLES........ 131
TUV........ 121
TWICE........ 233
TWIN........ 89
TWO........ 143
TWO BUTTES........ 151
TYER........ 131
Tykajlo, R........ 116
TYRO........ 123
TYRRELL........ 210

UDAD........ 211
UGLY........ 223
UKHM........ 4
UNCER........ 112
UNDAL........ 112
UNEXPECTED........ 223
Union Carbide Canada Ltd........ 4,12,14,85,133,157
.... 165,166,167,169
UNION........ 118
UNION MINES........ 111
UNITED KENO HILL........ 151,154
United Keno Hill Mines Ltd........ 4,5,6,8,15,16,114,154
.... 155,156,180,202,203,204
University of British Columbia........ 63,67
University of Calgary........ 2,34,36
University of Manitoba........ 2,68,71
University of Miami........ 2,63
University of Ottawa........ 2,38,48
University of Western Ontario........ 2,73,76
UNTILL........ 111
UR........ 151
Uranerz Exploration and Mining Ltd........ 15,16,197,198
Urangesellschaft Canada Ltd........ 106
URANUS........ 42
URN........ 141,144
URNIE........ 144
URSA........ 163
URSUS (105 B)........ 95
URSUS (106 D)........ 179
UTAH MINES........ 10,16
UTSHIG........ 112,117

Vaillancourt, P........ 2,73
VAL (105 B)........ 96,97,101
VAL (105 D)........ 111
VAL (106 C)........ 175
VAL A........ 95
VAL B........ 95,96
Van Angeren, P.D........ 114,124
Vancouver Creek........ 216
Vanderhorst, R........ 148
VANGORDA........ 4,141,143
VANGUARD........ 151
VARISCITE........ 137
VENUS........ 111
VERA........ 14,15,158,175
Verley, C.G........ 98
VERSLUCE........ 193
VH........ 95
VI........ 212
VICTORIA........ 211
VIKING........ 131
VINA........ 207
VINCENT........ 127
VIOLA........ 95,97
VIOLET........ 210,212
Violet Mining Co. Ltd........ 212
VIRGIN........ 223
VNER........ 89
VODKA........ 123
Voels International Development Co........ 225
VOLE........ 187
VOWEL........ 197
VUG........ 219
VULCAN........ 175
VYE........ 187

W........ 151
WABONA........111
WAD........ 141,144
WADE........ 193
WALCOTT........ 111
Walker, T........ 138
WALL........ 169
WALSH........ 121
WALT........ 163
WARBURTON........ 91
WART........ 233
WATERS........ 127
WATERFALL........ 123
WATSON........ 91
Watson Lake........ 14,16,73,84,86,91,92,98,100

Watson Lake map-area.......... 90-92
Watson, P.......... 2,3,38,48
WAY.......... 85
WAYNE.......... 151
WEASEL.......... 151,180
Webster, M.P.......... 108
WELCOME.......... 234
Welcome North Mines Ltd.......... 8,11,145,180
Wellesley Lake.......... 38
WELLGREEN.......... 193
WEN.......... 15,179,195
WENDY (105 J).......... 139
WENDY (116 H).......... 8,231
WERN.......... 219
WERNECKE (105 M).......... 14,151
WERNECKE (106 E).......... 183
Wernecke Joint Venture.......... 15,176,180,183,184
Wernecke Mountains.......... 15,55,56
WEST.......... 111
WEST-DAWSON.......... 223
WEST RIDGE.......... 216
Westfort Petroleum Ltd.......... 108
WET.......... 83
W.G. Timmons Expl. & Dev. Ltd.......... 180
WHEELER.......... 111
Wheeler, J.O.......... 111,191
WHIP.......... 147
WHISKEY JOE.......... 207
WHISKEY LAKE.......... 123
WHISTLER.......... 125
White Channel Gravel.......... 17,50
White, G.E.......... 96
White, P.S.......... 211,212
WHITE HILL.......... 179
WHITEHORSE COAL.......... 111
WHITEHORSE COPPER.......... 111,112
Whitehorse Copper Mines Ltd.......... 4,5,6,15,112,113
Whitehorse map-area.......... 110-118
WHITE RIVER.......... 193
Wiez, E.......... 216
WILLIAMS CREEK.......... 201
Wilman, C.......... 101
Wilman, P.......... 101
WILSON.......... 137
WIMP.......... 123
WINAGE.......... 223
WINDGAP.......... 193
Wind River map-area.......... 182-185
WINDY.......... 183
WING.......... 111
Wing, B.J.......... 180
WINKIE.......... 135
WINSLOW.......... 215
WISE.......... 135
Witham, J.......... 150
WOAH.......... 131
WOE.......... 207
WOLF (95 D).......... 83
WOLF (105 B).......... 95
WOLF (105M).......... 12,157
Wolfe, Resources.......... 181
Wolf Lake map-area.......... 94-102
Wolverine Creek.......... 18,21,23
WOOD.......... 210
WOODBURN.......... 215
WOODCHOPPER.......... 223
Woods, M.......... 212
WOOF.......... 10,13,116,118
WOPUS.......... 123
Worbets, T.......... 112
WORM.......... 219
WREN.......... 189
Wright, J.L.......... 86
WX.......... 175
WY.......... 224,226,227
WYNNE.......... 145

X.......... 96
XY.......... 11,107

YANG.......... 83
YETI.......... 123
YOGI.......... 183
YONO.......... 151
Young, S.......... 219
Youngman, B.A.......... 98
YR.......... 107
YUK.......... 187
Yukon Barite.......... 4
Yukon Consolidated Gold Corp.......... 211
Yukon Land Resources and Inventory Atlas.......... 79
Yukon Revenue Mines Ltd.......... 107
YUM.......... 233
YUSEZYU.......... 131

ZAC.......... 95
ZAP (105 G).......... 129
ZAP (105 M).......... 14,151
ZAP (106 D).......... 179
ZAPPA.......... 207
ZEBRA.......... 219
ZED.......... 141
ZEUS.......... 131
ZIELINSKI.......... 127
ZINC.......... 95
Zinc Creek.......... 50
ZIT.......... 201
ZIMMER.......... 127
ZOG.......... 175
ZOO.......... 10,129
ZULPS.......... 179
ZULU CHIEF.......... 211
ZX Joint Venture.......... 8,12

POOR

QUALITY

ORIGINAL